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ABSTRACT

Papers on the theme of quality in human resource development include the following: "Missing Link to Quality: An Examination of the Use of Steven Covey's '7 Habits of Highly Effective People' in State Agencies" (Adair et al.); "Executive Women in Business in the United States" (Bierema); "Extent and Nature of Employee Initiated Learning in the Workplace" (Confessore, Confessore); "Lessons Learned for Multimedia CBI [Computer-based Instruction] Evaluation Project" (Grozier et al.); "Predicting Employee Success in High Technology Industries" (Ellsworth); "Reflective and Collaborative Writing in Human Resource Development (HRD)" (Gaston, Gaston); "Evaluating an Intelligent Computer-Aided Instruction Authoring System" (Goodman, Swanberg); "Revolution in HRD Instructional Design" (Graham, Bonham); "A Model for the Development of Quality Foreign Language Programs in U.S. Companies Responding to a Global Economy" (Halka, Nolan); "New Employee Adaptation and Socialization" (Holton); "City of Carrollton Training and Development Program" (Kealer); "A Conceptual Systems Approach Model for Creating Collaborative Diagnostic Procedures and Strategies in HRD Settings" and "Theory of Margin as an HRD Problem Solving Tool for Coping with Life Stress" (Londoner); "Establishment and Adaptation of an Effective Organizational Model for Facilitation of a Career Development and Placement Program for Student-Athletes" (McGonagle, McBroom); "A 'New' Quality Tool for Leveraging Human Resources on Large and Complex Problems" (Mann); "Relationship of Gilligan's Moral Orientation and Continuing Educators' Salaries" (Manning); "Ensuring Quality Response to the Marketplace in Establishing a Professional Education Program" (Pevoto); "Performance-Based Assessment of Software Skills Proficiency" (Roberts); "Role of HRD in Successful Small to Mid-Sized Manufacturing Businesses" (Rowden); "Model for

Conducting Customer Audits" (Russ-Eft, Horibe); "Development, Review, and Management of HRD Curricula on an Electronic Database" (Scholl); "Total Quality Management in Higher Education" (Schuler); "International Etiquette" (Shou); "Differences in Cognition, Perception, and Social Behavior between the East and West" (Shou, Cai); "Trans-Texas Video Conference Network" (Spillane, Hockenberry); "Organizational Chart Inversion Facilitates Use of Personnel's Multiple Talents" (Stewart, Griggs); "Successful Technical Managers" (Supina); "Evaluation for the Bottom Line" (Tesoro); "Concepts and Issues in Developing Quality Workforce Literacy Programs" (Thach, Seaman); "What's the Difference?" (Watson); "Perceptions of HRD Quality in Health Care Institutions" (Welborn); "New Dimensions in Distance Learning" (Williams, Paprock); and "Meeting Customers Needs for Distance Learning Information" (Thach et al.). (YLB)

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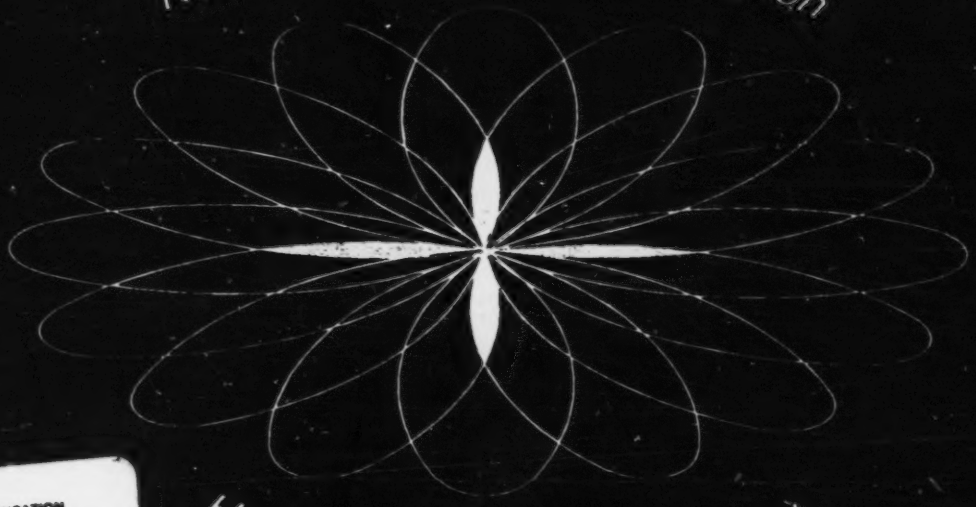

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On behalf of the Department of Educational Human Resource Development and the College of Education, I would like to welcome you to the First Annual National Research Conference on Human Resource Development. The theme **Quest for Quality** was chosen to emphasize our and your commitment to Quality of Education and Training, Quality of Work, Quality of Life and Quality of Research.

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Sincerely yours,

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The Missing Link to Quality
An Examination of the Use of Stephen Covey's 7 Habits of Highly Effective People in State Agencies

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On March 16, 1992, Texas Governor Ann Richards challenged all State agencies and their employees to deliver "...legendary customer service to all Texans...." Specifically, Governor Richards challenged state agencies and their Human Resource Departments or their Organizational Development staffs to implement Total Quality Management. Governor Richards states:

> "What this is in a nutshell, is out-of-box thinking and planning. This is about learning how to define solutions to problems in government, business, education and just about any other aspect of business life in Texas, in ways that don't depend on traditional modes of thinking."

The research and writings about the implementation of TQM have largely focused on the private sector. This paper focuses on the experiences of three state agencies using Steven Covey's Seven Habits of Highly Effective People as a means of preparing employees for change and as a precursor to implementing TQM.

Each agency has it's own story. One agency had been without central office training for almost three years; another has trained all exempt employees and is now training all other personnel; the third agency is in the process of merging with another. In each instance the Covey material has been used as an intervention. Recognizing that resistance to change exists, and that quality by command and compliance was unlikely, these agencies chose to prepare their staffs for cultural change by first addressing personal concerns.

The Seven Habits Philosophy

Steven Covey's Seven Habits of Highly Effective People is based on a character ethic which proposes that certain basic principles form the foundation for effective living. The objective of the program is to empower people and organizations by understanding and living principle-centered lives.

Covey defines habits as constant, often unconscious patterns of behavior that express our character. The habits are a combination of our knowledge, skills, and attitudes. The seven habits proposed by Covey are based on a natural sequential development. Habits 1 (Be Proactive), 2 (Begin With The End In Mind), and 3 (Put First Things First) lead people from a state of dependence to independence and self-mastery. Proactivity is the power to choose responses based on values instead of reactions to

circumstances. "Begin with the End in Mind" is a process of rescripting, starting with the definition of personal values and a personal mission. Once this is done, time is planned around the mission and values.

Habits 4 (Think Win-Win), 5 (Seek First To Understand), and 6 (Synergy) focus on interdependence and mutual growth. A win-win attitude means engaging in group problem solving to discover solutions where all parties win. To achieve win-win, an individual must suspend their own need to be understood long enough to fully understand someone else. Synergy is the result of seeing and appreciating that personal differences can be a source of information and creativity. By balancing physical, mental, spiritual, and social-emotional activities, Habit 7 (Sharpen the Saw) cultivates and transforms the other 6 habits into natural behaviors.

The following three reports show why and how the Covey material is being used in these state agencies. Two of the reports show what effect the course has had within specific programs and throughout the organization. The Texas Department of Health found that a broad range of training needs identified in an organization wide needs assessment could be satisfied with the Covey workshop. The Department of Human Services is already seeing change expressed in the evaluations of the workshop by employees. A case study of a program at the Texas Water Commission shows how the Covey material has been integrated into a groups day to day interactions.

Texas Department of Health (TDH)

Context

The Texas Department of Health had been without a central office training function for over two years. The need for an organization wide training needs assessment was driven by several factors: the Commissioner's commitment to employee development; the institution of a training organization (Human Resource Development) in the Bureau of Human Resources; and input from the Commissioner's Task Force on Human Resources indicating that training/staff development was a priority need. The purpose of the needs assessment was to identify specific staff development needs at all levels of the organization and use that information to develop a long term plan for the design and delivery of courses.

Intervention

Data for the needs assessment was collected from documents, interviews and questionnaires. The documents examined included:
data collected by the Commissioner's Task Force on Human Resources; exit interview data from 1989/90; other division or department reports related to training; and suggestions for training from class evaluations.

During the summer of 1992, structured interviews were conducted with executive level staff including: Associate Commissioners, Bureau Chiefs, Department heads and six of the eight Regional Directors or their representatives. Topics and/or skills mentioned as training needs in either the interviews or documents analyzed made up the items for the questionnaire. A total of 220 questionnaires was distributed throughout the organization. Eighty-two questionnaires were returned representing a 37% response rate. Forty-one questionnaires were from employees with supervisory responsibilities and 41 were from non-supervisory employees.

Findings

Interviews, task force data, and comments from the questionnaires indicated that morale was a major concern. Several interviewees wanted courses that would improve morale. Time, stress management, and coping with change were topics frequently mentioned in these discussions. One interviewee described the kind of course he thought would be helpful:

> "Something to help them take charge and make their program work. Take initiative, something to empower the non-supervisory personnel. Make people not so afraid of change, not too worried about change."

The questionnaire consisted of a series of open ended questions about learning needs followed by four Categories (Organization, Communication Skills, Management skills, and Individual Development) with a list of training topics in each category. The respondents were asked to rank topics, in order of importance, those training topics that would help them be more effective on their jobs. This resulted in rankings for supervisors and non-supervisors as well as overall rankings within each category.

In the Communication Skills category, Interpersonal Skills, Understanding Self and Others, and Effective Listening were among the top five topics. The highest ranked topics in the Individual Development Category were Personal Growth and Motivation and Career Development Strategies.

As a final exercise respondents were asked to rank the five most important skills/topics needed for them to be more effective in their jobs. An analysis of these responses led to a listing of the Top Ten training needs. They were (in order of importance): Computer Training, Interpersonal Communication, Career Development Strategies, Group Problem Solving/Decision Making, Time Management, Stress Management, Leadership, Personal Growth and Development, Dealing with Difficult People, and Team Building.

This Top Ten list illustrated the diversity of training needed at all levels of the organization. The presence of Group Problem Solving/Decision Making, Leadership, and Team Building indicated a general interest in exploring new ways of doing things at TDH. Four of the top five listed (Career Development Strategies, Time Management, Stress Management, and Personal Growth and Development) related specifically to individual concerns about work demands in a changing environment. The focus of personal concerns tends to be; "How are these changes going to affect me, and "What do I need to know to cope with changes and demands in my life and work?", as well as work management concerns; "What skills do I need to have to manage my work load?" It was determined that the Covey material taught basic skills relevant to almost all of the above topics. Since the needs assessment, the Commissioner has decided to implement TQM. It is believed that Covey's Seven Habits material will complement that effort.

Texas Department of Human Services (DHS)

Context

In 1991, DHS completed a needs assessment to determine current training needs in the organization. DHS was going through a time of transition and employee morale and productivity were low. One of the problems that surfaced was a lack of trust within the organization. The Management Development department believed that any program, but especially quality programs, were doomed to fail if trust wasn't in place. It was decided

that the organization needed a core program that focused on values and attitudes consistent with the goals the department wanted to achieve. Seven Habits of Highly Effective People was selected to be that core course.

Intervention

Implementation began with top management in the state office. In September of 1991, a pilot class for upper management was held. After only two days, even the skeptics were convinced that Seven Habits was good for them and the organization. Since that time, over 800 employees (including both state office and regional employees) have been trained.

Many of the early participants requested a follow-up course. In January, 1992, DHS executed the second phase of Seven Habits by introducing a course called Renewal. Renewal is a 2 day course which utilizes more practical application of the principles discussed in Seven Habits. A time management course, called QUAD 2, was implemented in February and focuses entirely on Habit 3. Also in February 1992, Seven Habits was offered to non-management staff.

Findings

Over 200 of the end-of-course evaluations were selected at random . A content analysis was done to determine which of the concepts discussed in the course were most powerful to the participants. Eighty participants indicated that Habit 5 (Seek first to understand and then be understood) was the most important. One participant explained how they were currently using Habit 5, "I am placing more emphasis on listening, empathizing, and learning before presenting solutions." Two other participants are already seeing results.

> "I have learned to be a much better listener to my staff and family. My subordinates have talked among themselves, commenting on what a better listener I have become since Seven Habits. This has enabled them to more openly discuss and bring out problems. It has caused them to bring up more solutions then problems. I want to get my managers trained so we can practice them together."

> "If you give people time to clearly state their position, it will give you a chance to find common ground. This will be and has already been beneficial in working with regional staff."

One participant indicated results that bridged Habits 4, 5, and 6.

> "An employee and I disagreed on the assignment of customer service representatives. She explained her position, then listened to my position. We came up with a number of areas we could both agree on."

Thirty-one participants felt strongly that Habit 1 (Be proactive) was the most important for them personally. Integrity stood out in one participant's mind.

> "I model, as best as I can, integrity. Looking at myself before jumping to conclusions. I feel that I am a better supervisor because of this. My whole life has improved."

Another is actively working on being proactive.

> " I have been better able to accept situations in the workplace that are outside my control."

Although training in team development is not a stand-alone theme in Seven Habits, some participants have already experienced changes within their team's functioning. As one participant explained, "I have begun to use my employee's individual skills to accomplish mutual goals." Another participant worked with the medical program staff to streamline "Medicaid: A Users' Guide". They "saved the agency $146,000 a year and redirected 790 staff hours at Printing Services."

The director of management training is already seeing small changes in DHS since the implementation of Seven Habits. She describes it more as a "feel" in the organization that's hard to put into words.

> "It is especially evident in meetings. People are really listening to each other. They are trying to understand others' points of view and moving towards win-win solutions."

Seven Habits strongly advocates personal development. Individual character is seen as the bedrock of both managerial and organizational effectiveness. The course facilitates the integration of one's personal and professional life. Several participants are already realizing the impact of this union.

> "The focus [of this course] is on yourself. You must develop yourself before expecting to have influence on others"

Another commented,

> "I've been feeling like I'm running in place - personally and professionally. This program seems to have provided something I need (motivation and suggested methods/ approaches) to begin breaking the log jam."

Yet another believes that Seven Habits has

> "given me the opportunity to take a closer look at myself - self-evaluation and try to apply the principles to work and everyday life."

DHS believes that the Seven Habits class is the first step to quality. Any change in an organization must start at the personal/interpersonal level, not at the management or organizational levels. TQM must begin with trust and individual responsibility. Covey's Seven Habits of Highly Effective People is the missing link that adds these dimensions to the overall quality movement. As one participant explained, "You have done your part. Now it is up to me!"

Texas Air Control Board (TACB)

Context

The quest for quality began at the Texas Air Control Board, an environmental protection agency, in 1988 when all personnel participated in a workshop entitled "Realizing Excellence." This was followed by training in team building which was facilitated by agency volunteers trained at the John Gray Institute in Beaumont, Texas. Since then numerous teams have been formed and used for solving problems throughout the agency. This case study focuses on the Technical Operations (TOps) division of the TACB and its problem solving team of managers and supervisors.

Intervention

In July of 1992, the TOps program staff participated in an organizational survey to assess employee's feelings about their work, the people they work with, and the organization. Fifty- three of 83 employees participated in the survey. One section of the survey was devoted to other issues of concern and included inquiry into issues such as "the extent to which the TQM process has improved my performance." Seventy percent of the participating employees responded negatively. In an effort to explore the meaning behind these responses to TQM, six focus groups were conducted. Using the survey as a reference, the goal of the meetings was to have each group brainstorm issues of concern regarding job satisfaction. At the conclusion of the focus groups, six supervisors/managers volunteered to be on a problem solving team and present its findings to the Program Director in October.

The problem solving team organized in late August. The team members discussed the critical elements of successful meetings, established their ground rules and set a regular meeting time once a week. By the second meeting, the group determined the following to be a critical organizational problem:

> There is no safe mechanism with which to show management that their words do not match their actions.

In the third meeting, the problem statement was expanded and the consequences were explored. This resulted in the following:

> Management words/actions do not match. It appears that management is either unaware or unconcerned about the consequences of their behavior. These consequences include: diminished trust within the organization; lack of faith in management decisions; fear of reprisals; confusion and loss of initiative among employees; loss of productivity; skepticism and cynicism about TQM thereby undermining the entire effort.

> The team defined the desired state as

> "one in which there is a safe and constructive mechanism to inform a manager of the adverse impact when his/her words and actions conflict. In a TQM environment it is essential that a manager's words and actions be congruent."

After developing the above, the team became noticeably and admittedly dysfunctional. Meetings were canceled because only four members attended. Finally, an internal consultant began working with the team members. TACB's Quality Management Division had planned to implement Covey's Seven Habits program as the first step in implementing quality. The consultant recommended that the team propose to the Program Director that they attend the Seven Habits training. The consultant suggested that the Seven Habits profile might be that "safe and constructive" mechanism by which the staff could give input to their manager's and supervisors regarding the disparity between their words and actions.

Eight of the eighteen TOps supervisors and managers, including the Program Director, attended a three hour presentation by Covey in San Antonio. As a result of this exposure to the material, the Program Director purchased copies of Covey's book for everyone in his department. The Program Director has begun to hold periodic staff meetings where the habits are discussed. He has also prepared and shared his personal mission statement with his staff.

In February, the Program Director attended 3 and 1/2 days of training in the seven habits principles. Part of that training used a profile which included a self assessment as well as feedback from employees as to the degree to which the participant practices the principles taught in Seven Habits. After receiving the results of his profile, the Program Director met with all of the individuals who had given him feedback and shared the results of his profile as well as his personal development plan. Since then he has publicly announced his intent to change some of his behaviors in order to be more effective. He has encouraged staff members to challenge him if they feel he is not practicing the seven habits.

Having set the example himself, the rest of the management team is studying the book and beginning to practice the principles in it. Morale is improving and the staff is encouraged. In problem solving groups, one hears people saying "Let me see if I understand your point. You're saying ...." (Habit 5: Seek first to understand, then to be understood); or, "I'm going to be proactive here and ...." (Habit 1: Be proactive); or, "How can we both come out ahead here?" (Habit 4: Think Win-Win). The Program Director has arranged for all members of his staff to attend the Seven Habits training. Despite the impending merge with the Texas Water Commission and all that may entail, teams are working more cohesively and positively.

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Executive Women in Business in the United States: A Study Of Their Learning Techniques, Strategies, and Coping Mechanisms in Corporate Cultures

LAURA BIEREMA

Background

Women compose nearly half of the workforce and their numbers continue to increase. Painstakingly, some women have achieved positions of power and responsibility in organizations, a trend that is expected to continue, based on demographics (Gonzales, 1988; Noe, 1988; Bloom, 1986). It is in the organization's best interest, therefore, to attract, develop, and retain women. Despite this reality, women's experience in organizational culture can be a toilsome struggle to get ahead. Executive women contend with the "glass ceiling" syndrome in which they reach a certain organizational level, and then as if there were an invisible glass barrier above them, advance no higher in the corporation (Morrison, White, Van Velsor, & Center for Creative Leadership, 1992), while the men bypass them. Such a grim reality causes us to wonder why some women excel in the context of corporate culture, while others fail, and how the successful ones learn the cultural nuances and secrets to survive.

The purpose of this study is to understand how executive women develop and function within the context of white male dominated organizational culture. Specifically, the study identifies the learning techniques, strategies, and coping mechanisms executive women employ to thrive within the corporate culture. Research questions guiding this study are as follows: What formal and informal learning do women experience to develop their understanding of organizational culture? What barriers do women encounter in their climb up the corporate ladder? What are executive women's strategies for coping and excelling in corporate environments?

This study is important in that it will add to the theoretical base of adult learning, organizational anthropology, organizational development, and human resources development theory. The study takes a holistic approach to understanding women's experience in corporate culture, based on understanding the organizational culture from an anthropological perspective, with the assertion that businesses are patriarchal organizations.

Methods

This study will advance the theoretical base of organizational anthropology, by adopting the values and analytical techniques used by anthropologists to construct sociocultural interpretations of organizational experience. Organizational anthropology is gaining momentum as a method of solving cultural business problems (Baba, 1986; Garza, 1991a, 1991b). Using anthropological techniques of observing and interviewing "native" organizational women about their experiences will help us better understand how to develop organizations that attract and retain diverse workforces while simultaneously enhancing productivity.

The study will collect data using the ethnographic techniques of interviewing and observation which are used extensively in anthropological research. The sample will include executive level women in Fortune 500 companies who have worked in the environment for at least five years. Plans are to interview twelve women, two of whom have been interviewed to date. Interviews will be tape recorded on an audio cassette and transcribed verbatim. Participants will be observed in their normal work environment prior to the interview. Field notes of the observation will be made and used to supplement the transcripts.

Data will be analyzed through a continuous process beginning with data collection and concluding with written conclusions about the study. Patton (1990) suggests that qualitative analysis grapples with the issue of "convergence" which is the problem of appraising how the data fit together. The first step in this process is to look for similarities in the data. Once comparable attributes among the data are drawn tentative categories can be found. After categories are delineated, they will be prioritized in order of importance, and conclusions will be drawn.

Preliminary Results

Although the results are premature with only two interviews completed, it is apparent that women participants view their organizational culture experience as different from men, and have specific strategies to cope and succeed. Participants indicate that they usually learn the culture from other people, relying on special male relationships and female networks.

Future Plans

This study is part of a dissertation with the University of Georgia, with completion anticipated during 1993. Human resources development theory will advance through this study as we learn more about how to attract and retain one of the largest growing segments of the workforce -- women. Such information will be valuable to researchers, students, and practitioners alike, in the quest to develop qualified workforces with a shrinking labor pool from which to draw talent. Often, less emphasis is placed on developing female talent, favoring instead, the identification of existing male talent, both internal and external to the organization. To complete in a globalizing environment with a shrinking workforce, companies are compelled to develop diverse human resources. Strategies for conducting such development will be identified by this study.

Through better understanding women's needs and experience in organizations we can create improved organizational systems, capitalize on diversity and maximize human resources development. This response to the growing diversity of the workforce will be valuable to aspiring women, their organizations on both local and corporate levels, and to U.S. business in general, since expanding the diversity and learning opportunities for the workforce will in turn make us more competitive.

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The Extent and Nature of Employee-Initiated Learning in the Workplace

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One of the key premises of "quality programs" is the belief that each employee is a key contributor to the bottom-line performance of the organization. Inherent in this premise is the belief that employees must become empowered and independent, able to make informed decisions, to work collegially, and to be more productive by working "smarter." These concepts are being further emphasized with the increasing interest in "learning organizations," in which individuals act as "the agents through whom the learning takes place"(Shrivastava, 1983).

Although over 30 billion dollars is spent annually in formal training programs in the United States (Carnevale & Gainer, 1989), it is believed that these programs contribute only 17 to 20 percent of what workers need to know to do their jobs (Baskett, 1993). The remainder of work-related learning occurs independently, informally, and within the "community" of the workplace. The incidence of informal learning on the job is well documented (Marsick and Watkins, 1990; Tough, 1992). As organizations successfully adapt to changes in technology, changes in the global marketplace, and the need to be more responsive to customers' needs, the importance of self-directed learning, and ways to cultivate it, has become one of the leading challenges for human resource development professionals.

Self-Directed Learning in the Workplace.

Incidence of self-directed learning in the workplace can be linked to various conditions within an organization, including the management style, the type of training required, the type of information to be communicated, and the size of the company (Foucher, 1993). Self-directed learning activities tend to occur more often in organizations that have participative leadership styles, or where learning is considered an important part of the culture (such as professional organizations). It is also more likely to occur in companies where complex tasks are part of the work, or where the work at each station is highly specific. In organizations where numbers of employees need to have the same knowledge, or where there is great importance attached to the information (as with safety information or when misinformation may lead to litigation), more standardized, less self-directed training procedures will be used. Budget cuts in training departments will also affect the amount and type of training that takes place. For "critical" training, formalized programs are more likely to be used. For training that is viewed as less critical, self-directed learning methods may be utilized. Finally, self-directed learning is more likely to be used in smaller organizations than in larger organizations.

Self-directed learning is linked to generative organizations. The behaviors identified as key in these organizations are very similar to behaviors displayed in self-directed learning: openness to alternatives; ability to make connections between seemingly disparate issues, topics and information; creativity, including flexibility and a willingness

to take risks; and personal efficacy. The capacity of a generative organization to adapt quickly and effectively is directly dependent upon how well and efficiently employees learn (McGill, Slocum, Lei, 1992). Self-directed learning plays a key role in the development of this capacity.

The Study.

There appear to be several factors common among self-directed learners. Oddi (1986) suggests the construct that defines self-directed learners is associated with measures of five dimensions: (a) educational participation, (b) adult intelligence, (c) self-confidence, (d) endurance, and (e) affiliation. Guglielmino (1977) suggests this construct has eight dimensions: (a) openness to learning opportunities, (b) self-concept as an effective learner, (c) initiative and independence in learning, (d) informed acceptance of responsibility for one's own learning, (e) love of learning, (f) creativity, (g) future orientation, and (h) ability to use basic study and problem solving skills. Confessore (1991) suggests that self-directed learners rely on a balance of various conative factors, including (a) desire to acquire particular skills, information or attitudes, (b) initiative, (c) resourcefulness, (d) persistence, (e) confidence in one's basic learning skills, and (f) perception of self as a life-long learner.

Recognizing that several quality organizations have expressed an interest in implementing self-directed learning opportunities as a function of human resource development, this study was designed to discover the relationships between selected dimensions of the self-directed learning construct and workplace learning. In particular, this study undertakes to learn (a) with regard to characteristics of self-directed learning, can respondents who describe work-related learning projects be distinguished from those who describe projects not related to work and, (b) what practical guidance can be offered human resource development professionals as a result of these findings.

Methodology.

The Learning Profiles Questionnaire was developed for use in a general study of learners' self-perceptions and was validated using a population of thirty subjects between the ages of 8 and 65 (Confessore, G. and Confessore, S., 1993).

The questionnaire asks respondents to supply the following information: (a) the number of learning projects undertaken in the past year, and a brief description of a recent learning project; (b) whether the recent learning project was related to others already completed or planned; (c) whether the project was undertaken on the respondent's own initiative or on the recommendation or direction of some external authority; (d) the "specificity of focus," or the number of roles the individual has undertaken in life (parent, spouse, employee, student); (e) an assessment of desire, initiative, resourcefulness, and persistence in learning, both generally and for the project reported; (f) an assessment of basic learning skills, including reading, writing, quantitative, reasoning and motor, both generally and for the project reported; and (g) self-perception as a life-long learner. Demographic data, including age, gender, level of education, work status, and dependency status were also collected.

The questionnaire supplied the following operational definition of the term "learning project":

For the purposes of this questionnaire the term "learning project" may be applied to any activity, of any length or complexity, that involves an effort to acquire new information, attitudes, or skills. It may be a project that requires only a matter of hours to complete or it may be one so complex that it requires years to complete.

The instrument was distributed in person to a population that included public library patrons, participants in an Elderhostel program, employees at a federal training facility, and employees of a major food purveyor. In each case, respondents were asked to participate by completing the survey at their leisure and return it before leaving the site. There were 354 (15[illegible] male and 202 female) respondents.

This study compares data submitted by 117 respondents, who stated that the learning project they chose to describe was work-related, to those submitted by the 136 remaining respondents who (a) fell within the same age range as the 117 cited above and (b) described a project that was not work-related. It should be noted that these data were gathered with more than one study in mind. Hence, the questionnaires were distributed to respondents of any age. The sole criterion for inclusion in the aggregate population was the capacity to complete the instrument without assistance. Since the youngest and oldest respondents who described a work-related learning project were 21 and 74 respectively, the same age limitation was imposed on the comparison population of the present study. This was done in order to assure the validity of comparisons between those who reported work-related learning projects and those who did not. Hence, data from 253 respondents are considered in this study.

Findings.

Number of Projects-- The population considered in this study reported involvement in an average of 6.92 learning projects within the past year. This is quite consistent with the findings of two of the earliest studies of adult's learning projects (Tough, 1971; 1978) in which it was found that adults conduct an average of eight and five learning projects per year, respectively.

Work-Relatedness--After the respondents described a learning project, they were asked whether they viewed the project as having been work-related. Nearly half (46.20%) viewed their project as work-related. Content analysis reveals that 46.15% of those who reported work-related projects were involved in learning something associated with the use of computers. This compares to only 12.50% of the projects not related to work involving computers. Other areas of work-related projects included broadly described management topics, such as learning facilitation, quality, and communication skills (12.82%); learning job specific skills, such as enhancing product knowledge (11.96%), and; developing cultural literacy, such as learning a foreign language (4.27%).

Relation to other learning-- Respondents were asked to indicate whether the project they described was related to other completed or planned learning projects. In this case, responses given by those who described work-related projects were distributed quite differently form those who reported projects that were not work-related. Only 17.90% of the work-related projects were viewed as isolated learning, while 41.90% of the projects not related to work were viewed as such. Chi square analysis reveals that this distribution cannot be attributed to chance ($p = 0.000$) and the correlation coefficient for these two items

is a relatively low, but statistically significant 0.259 ($p = 0.00$). It would appear that work-related learning projects may be more thematic than projects completed outside the workplace.

Reason for undertaking project-- Respondents were asked whether they had elected to undertake the learning project described for their "own reasons," or had been "directed or required to undertake this project." More than half (52.10%) of those who described work-related projects asserted they had undertaken their projects for their own reasons, while 75.00% of those who described projects not related to work made this claim. Once again, chi square analysis indicates this distribution cannot be attributed to chance ($p = 0.000$).

Number of life roles-- It is widely believed that the multiplicity of life roles associated with adulthood must be taken into account in the learning environment (Apps, 1981; Hall, 1988). When the total number of life-roles claimed by each respondent is compared to whether the learning project was work-related a statistically insignificant, correlation coefficient of 0.062 ($p = 0.32$) is found. Most (66.40%) of the respondents claim to have between three and six simultaneous life-roles. The distribution of whether the learning project was work-related was nearly equal (87 work-related, 81 not work-related) in this range. At the lower range of zero to two life-roles, only 18 reported work-related projects while 42 reported projects not related to work.

Self-efficacy-- Self-efficacy as a learner is included in the construct for self-directed learners (Guglielmino, 1977; Oddi, 1986). In this study indications of self-efficacy were sought in three areas: (a) conative (motivational) factors, (b) basic skills factors, and (c) view of self as a life-long learner.

The questions for all three areas addressed learning in general as well as the specific learning projects identified by the respondents. Responses for individual categories were considered first. Then responses for each category (general and specific) were combined, producing one score for each of the four categories: GMOT (motivation factor-general category), SMOT (motivation factor-specific category), GBAS (basic skills factor-general category), SBAS (basic skills factor-specific category).

The conative factors were evaluated by asking respondents the extent to which they agree or disagree with statements that attribute to them a strong desire to learn (labeled desire), regular initiative in undertaking learning projects (labeled initiative), the ability to locate necessary learning resources (labeled resourcefulness), and persistence in completing learning projects (labeled persistence).

Both the separate and combined scores correlate with whether the project was work-related (relatedness) and also with the respondents' reasons for undertaking the project (drive).

None of the four factors taken individually correlate significantly with work-relatedness. Only initiative correlated significantly with drive (0.374, $p = 0.00$). When the combined score for the specific project(SMOT) is compared with drive, however, there is a statistically significant correlation (0.223, $p = 0.00$). When compared with work-relatedness, no statistically significant correlation is found for any factors or combined scores either in the general or specific category.

Comparison of the four conative factors reveal that all are significantly correlated with each other and with the total score. The range of correlations for learning projects in the general category ranged from a low of 0.454 comparing desire to persistence, to a high

of 0.635 comparing initiative to resourcefulness. Correlations for the specific category range from a low of 0.331, comparing initiative with persistence, to a high of 0.604, comparing resourcefulness with persistence. Correlations of individual conative factors with the total score, for the general category, ranged from a low of 0.756, for initiative, to a high of 0.862, for persistence. For the specific categories, the comparisons revealed correlations as low as 0.756, for initiative, and as high as 0.809, for resourcefulness. These findings are displayed in Tables 1 and 2, below.

Table 1: Matrix of Correlation Coefficients for Conative Factors and Learning Projects in General (0.00)

	Desire	Initiative	Resourcefulness	Persistence	Total
Desire	–	0.593	0.484	0.454	0.762
Initiative	–	–	0.635	0.603	0.862
Resourcefulness	–	–	–	0.620	0.826
Persistence	–	–	–	–	0.817

Table 2: Matrix of Correlation Coefficients for Conative Factors and Learning Projects Described (p = 0.00)

	Desire	Initiative	Resourcefulness	Persistence	Total
Desire	–	0.536	0.507	0.476	0.797
Initiative	–	–	0.442	0.331	0.756
Resourcefulness	–	–	–	0.604	0.809
Persistence	–	–	–	–	0.762

Basic skills-- The basic skills factors were evaluated by asking the respondents the extent to which they agree with a series of statements about their basic learning skills in reading, writing, mathematics, reasoning, and motor skills. None of the correlations of individual skills with work-relatedness or drive for either the general or the specific category was statistically significant.

Comparison of the five basic skills factors reveal that all are significantly correlated with each other and with the total score. The range of correlations for learning projects in general went from a low of 0.427, comparing reading skills with mathematics skills, to a high of 0.686, comparing reading skills with writing skills. Correlations for the specific category range from a low of 0.486, comparing mathematics skills with motor skills, to a high of 0.768, comparing reasoning skill with motor skills. Correlations of individual basic skills factors with the total score, for the general category, ranged from a low of 0.751, for mathematics skills, to a high of 0.855, for reasoning skills. For the projects described, the comparisons revealed correlations as low as 0.745, for mathematics skills, and as high as 0.875, for reasoning skills. These correlations are displayed in Tables 3 and 4:

Table 3: Matrix of Correlation Coefficients for Basic Skills Factors and Learning Projects in General (p = 0.00)

	Reading	Writing	Math	Reasoning	Motor	Total
Reading	–	0.686	0.472	0.626	0.542	0.785
Writing	–	–	0.448	0.712	0.529	0.827
Math	–	–	–	0.509	0.476	0.751
Reasoning	–	–	–	–	0.666	0.855
Motor	–	–	–	–	–	0.773

Table 4: Matrix of Correlation Coefficients for Basic Skills Factors and Learning Projects Described (p = 0.00)

	Reading	Writing	Math	Reasoning	Motor	Total
Reading	–	0.760	0.490	0.752	0.655	0.847
Writing	–	–	0.558	0.725	0.655	0.871
Math	–	–	–	0.503	0.486	0.745
Reasoning	–	–	–	–	0.768	0.875
Motor	–	–	–	–	–	0.833

Correlations of combined conative scores with combined basic skills scores were all statistically significant. They ranged from a low of 0.410 (p = 0.00), comparing basic skills in general with conative factors for the specific category, to a high of 0.695 (p = 0.00), comparing conative factors in the general category with conative factors in the specific category.

Life-long learning-- View of self as a life-long learner was assessed by a question that asked the degree of agreement with the following statement: "I expect that I will be involved in one learning project or another throughout most of my life."

Nearly the entire population (95.65%) indicated agreement with this statement. This distribution renders most forms of statistical analysis meaningless. However, it does raise an important question about the assertion that self-directed learners need to hold such a view. Since this view is distributed throughout the population it does not appear to be a meaningful discriminator.

Demographic factors-- Much of the literature agrees readiness for self-directed learning is related to age and level of formal education (Confessore & Long, 1992; Long & Confessore, 1992; Redding & Long, 1991). Sharon Confessore (1992) found important differences in classroom interaction among students according to age, employment status, and financial dependency characteristics. Therefore, demographic data regarding age, gender, enrollment in formal education, level of education, employment and financial dependency status were deemed important to this study.

Because age has been associated with a variety of developmental theories, it was decided to record age according to three different schema. Respondents were grouped according to the traditional distribution of twenties, thirties, and so on. They were also grouped according to categories suggested by Chickering and Havighurst and another scheme suggested by Levenson and Sheehy (Chickering & Havighurst, 1981). Regardless of the scheme used, the largest number of projects, both work-related and non-work-related, were completed by individuals between the ages of 30 and 49. A majority of these

individuals also reported the projects had been initiated by the respondents. Both distributions were found to be statistically significant across all three age schema (p values of 0.002, 0.002, 0.004, respectively).

A substantially higher percentage of men (53.90%) described work-related projects than did women (39.90%). This distribution is not attributable to chance ($p = 0.026$). However, chi square distributions of gender and drive reveal no statistically significant difference between the 46.00% of men and the 44.40% of women who made this claim ($p = 0.811$).

Respondents were grouped according to level of education into categories of "less than a high school diploma, high school diploma, bachelors degree, more than a bachelors degree. Neither work-relatedness nor drive correlate significantly with level of education (p values of 0.52 and 0.34, respectively). There are low, but statistically significant, correlations between level of education and general motivation (0.254, $p = 0.00$), specific motivation (0.181, $p = 0.00$), and both general and specific basic skills (0.209, $p = 0.00$ and 0.217, $p = 0.00$, respectively). When levels of education were distributed across categories of work-relatedness and drive, chi square values were not found to be statistically significant ($p = 0.600$ and $p = 0.625$, respectively).

Sixty-eight (26.90%) of the respondents were enrolled in a formal school program at the time of the survey. Respondents distributed themselves exactly evenly (34 each) between individuals reporting work-related and non-work-related projects. When the distribution is analyzed using drive, however, those individuals who indicated they undertook the project for their own reasons were distributed significantly ($p = 0.044$) different from those who indicated they had been directed to complete the project.

There is no significant difference between the distribution of individuals who listed themselves as financially independent and those who classified themselves as financially dependent (chi square = 0.56). However, many more individuals who reported work-related projects also reported being financially independent. This distribution was found to be significant ($p = 0.025$).

Conclusions.

This project undertook to describe the characteristics of individuals who engage in learning projects on the job. To provide a framework for this study, participants were asked to describe a learning project; comparison was made between individuals who reported being engaged in learning projects generally, and those reporting being engaged in learning projects on the job. The learning projects were distinguished by whether individuals felt they had undertaken the projects on their own initiative, or if the project had been undertaken at the direction of a supervisor. Three findings are of particular interest: (a) the motivation to undertake a self-initiated project is not related to whether the project is undertaken at the individual's own initiation; (b) education level does not influence whether a person takes on a learning project; and (c) work-related projects are not completed in isolation, rather they are related to other learning projects undertaken by the participant on the job.

Fully 25% of projects not related to work undertaken by employed adults are viewed as having been required or directed by some external authority. Further, even though it would seem reasonable that some substantial portion of work-related learning would involve some degree of supervisory direction, over half were viewed as having been undertaken for the employee's own reasons.

Being directed to undertake a project does not seem to affect an individual's desire, initiative, resourcefulness, or persistence. Almost half of the projects are undertaken at the direction of an authority, yet no significant difference was found between the motivation scores of those reporting taking on the project for their own reasons and those who were directed to undertake the learning. For human resource personnel, this finding is important because it suggests that directing employees into learning projects is not harmful. This finding is consistent with that of Spear and Mocker (1984) which suggests that independent learning may be limited if the organization fails to create opportunities for independent learning. Rather, as long as the individual is given latitude in designing the method and process for acquiring the learning, the project becomes proprietary and effective in terms of the willingness of the employee to engage in learning on the job.

The finding that educational level does not appear to correlate significantly with whether a person will engage in a self-initiated learning activity is important because it is substantially different from findings reported in self-directed learning literature. From the standpoint of the HRD department, however, this finding provides evidence that all employees, regardless of position in the organization, have the potential to engage in self-initiated learning projects on the job. When designing training activities, use of learning contracts, or self-designed projects may prove as effective for workers on the lines as for high level executives. This finding also suggests that training programs may benefit from input from employees most directly affected by the training being designed, especially regarding the degree to which they are comfortable with their basic skills.

The third finding, work-related projects are most often part of larger, more complex projects, or are linked in some way with other learning on the job, also has implications for HRD professionals. Spear (1988) notes: "learning sequences progress, not necessarily in linear fashion, but rather as the circumstances created during one episode become the circumstances of the next necessary and logical step in the process." Thus, to encourage individuals to engage in self-initiated learning on the job, opportunities to engage in the process must be pointed out to the employee. This process of structuring learning activities so that a cumulative effect occurs is consistent with the premises inherent in "learning organizations". The findings of this study suggest a link between the employee's engaging in self-initiated learning and the ability of the organization to regenerate itself. Encouraging employees as they engage in self-initiated learning may stimulate this regeneration.

Self-initiated learning is an important part of all employees' training activities. The findings of this study suggest that HRD personnel can encourage and stimulate the incidence of this type of learning throughout all levels of any organization.

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Lessons Learned for Multimedia CBI Evaluation Project

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Introduction

USAA, founded in 1922, is a worldwide insurance and diversified financial services institution headquartered in San Antonio, Texas. It is made up of 70 subsidiaries and affiliates, and owns and manages over $25 billion in assets. Forbes magazine describes USAA as ". . . a place where the financial supermarket -- a one-stop shop for everything from stocks to life insurance -- really works." USAA members insure one another and share in any profits realized by USAA. Its membership is primarily current and retired military officers and their dependents.

USAA is at the forefront of insurance and financial services organizations due to its emphasis on quality service and information technology. It is a pioneer in the use of computers, telecommunications, image processing, and other information management tools that have significantly increased the productivity of the over 14,000 employees worldwide and provides consistently superior service to more than 2.3 million members and associate members.

Employee training and development supports USAA's goal of continuous quality improvement in every area of operations. In fact, this commitment to training and career development is evidenced by the position of the Training and Development (T&D) Department within the company. Rather than being a division of Human Resources, T&D is a separate organization which reports directly to USAA's Chief Administrative Officer.

The impetus for examining the implications of multimedia computer-based instruction (CBI) at USAA was provided by the users of T&D services. A frequent message from T&D customers has been "you take too long, and you cost too much." These users wanted more of the quality training they had come to expect, yet they wanted this additional training at a lower cost and delivered in less instructional time. This desire, coupled with a sustained growth in USAA's employee base, and the continued proliferation of requisite skills, mandated new training approaches. Concurrently, the unprecedented rate of advancement in computer technology was shaping the company's strategic plans to include a progression toward an intelligent workstation based on the IBM PS/2 series architecture. The nature of this hardware allows great flexibility in the retrieval and presentation of information heretofore not exploited at USAA.

In light of these needs and the strategic parameters and directions, T&D began a quest for a solution. This search led to a much-touted, automated training vehicle known as computer-based instruction or CBI. T&D was already familiar with CBI in the

mainframe environment. For nearly a decade, they had experienced CBI's capabilities of interactivity and individualized, self-paced instruction and had found it to be an effective and efficient training medium. In terms of cost and time, this medium is most efficient when the number of students needing training is large, the training window is small, and the instruction is relatively static. However, mainframe CBI limited the scope of instruction to psychomotor skills, namely, computer keying skills. When teaching to objectives calling for cognitive or affective domain knowledges or skills, mainframe CBI was found to be inferior to other, more conventional training methods.

Now, due largely to recent notable improvements in the processing speed and on-line storage capacities, CBI technology had moved into a new age: the age of interactive multimedia. Multimedia CBI not only relies on text, but also employs sophisticated, high resolution static and animated graphics, CD quality audio, and digitized still and motion video to create a multisensory learning environment.

Realizing the positive impact this technology could have on meeting the dynamic training challenges USAA will face during this decade, T&D launched the Multimedia CBI Evaluation Project.

Project Description

There are many documented experiences of development and delivery projects that were conducted by in-house training and systems professionals. There also exists a wealth of literature that supports the use of multimedia CBI in instructional settings, and there are even more reviews of hardware and software platforms that are all "ideal" for multimedia CBI. Of course, none of the documented cases occurred within USAA, and, because of the many political and logistical implications associated with the introduction of an emerging technology, T&D chose to conduct an in-house evaluation of the development and implementation processes, the instructional merit of the technology and the hardware and software that would best serve T&D users' needs, yet conform to mandated architectural guidelines.

The project began with three objectives:

1. Identify and evaluate a software package for multimedia CBI authoring and delivery.
2. Determine the economic and technical feasibility of in-house development and delivery of a multimedia CBI course.
3. Determine the effectiveness of multimedia instruction.

To fully understand the effort required to introduce this PC-based technology into a traditionally mainframe environment and several of the lessons that were learned, some insight into the division of work within the team may be helpful. As noted earlier, one of the project objectives was to learn if the implementation of PC-based multimedia CBI technology was technically feasible in the USAA systems environment. In essence, T&D wanted to ascertain whether the talent, experience and technology that existed within the organization could be brought to bear to support the development and delivery of multimedia CBI courses. The project required a myriad of skills and backgrounds which, basically, fell into two categories: training development and systems support.

Training development. The training development team was responsible for all aspects of instructional design and on-line development of the courseware. While most of the team members were from T&D, there were also players from Media Resources and the Information Services Division (ISD) support team. The T&D team members w
ere most concerned with the effectiveness and efficiency of the training development and delivery. For T&D, the bottom-line was: Will this technology provide a high quality learning experience in less time and for less money?

Systems support. The ISD support team was almost entirely responsible for the systems aspects of the project, including conducting the lion share of the evaluation methodology and ISD quality control. T&D participated as a user of the system in defining requirements, evaluating performance outcomes, and providing the project funding. The ISD support team focused on the integration of this technology with existing information systems at USAA and the strategic direction for future systems. For ISD, the overriding question was: Will the corporate infrastructure (in terms of hardware, software and expertise), present and future, support this technology?

Lessons Learned

While the two divisions (T&D and ISD) worked well on their respective tasks, in tandem they faced challenges that went beyond hardware and software integration concerns. Each party approached the project with different objectives, expectations, problem solving skills, priorities, and communication styles. In an ideal world, the team would have addressed these issues at the onset. However, faced with resource shortages and deadlines, the team members overlooked these differences and forged ahead.

1. A project description should be established. When the project sponsor notifies the system planner of the need to assess a new technology, the first item on the list of things-to-do should be the development of a project description. A clear and detailed statement of scope and objectives should be composed. This should be a document that is distributed, understood and agreed to by all potential project participants.

2. Communication is essential. As soon as the need to evaluate a new technology is voiced by the sponsor, ISD should contact all potentially impacted areas to discuss the project. In turn, the sponsor should communicate the requirements as early as possible so reliable, valid decisions can be made. Open and honest communication should prevail throughout the project between all parties. Create a committee consisting of representatives from all areas involved in the project, then me et on a regular basis. Strive to maintain a high level of interest and participation from all areas. Some phases of the project may not impact a particular area, which can lead to a feeling of time being wasted and a "dropping out" of the project. The project committee (called Working Group at USAA) and a copious distribution list for all project related documentation will prevent delays resulting from the "we weren't told about this!" reaction. All of this fosters teamwork and sets the stage for constructive idea generation and follow-up.

3. The user is a customer. The sponsoring group, typically called "users," are actually customers of ISD services and should be offered the level of quality and service USAA affords all customers.

4. The customer has responsibilities. The customer has responsibilities beyond delineating requirements and acting as a test base for the technology. The functional requirements should be clearly stated and categorized or weighted, e.g., required (3), preferred (2), nice to have (1). The customer should also ensure that the overriding purpose of the project is communicated to all participants frequently.

5. The project team should be proactive. When interfacing with the customer and the other affected areas, the project team should actively seek information and advice. This is especially important in a large, complex organization where responsibilities are decentralized. Make every effort to anticipate problems and controversies and resolve them early in the project. A reactive approach tends to perpetuate itself, diverting attention from the critical tasks at hand.

6. The methodology should be communicated to the sponsor. The correct methodology should be identified and then explained to the sponsor/customer. The sponsor's responsibilities should be highlighted so these can be understood and met in a timely way. The optimum approach would involve a joint effort on the part of the customer, ISD, and Quality Assurance in the development or selection of a methodology. A feeling of ownership in the process will ensure the understanding of that process and commitment to it.

7. The evaluation methodology should accommodate new technologies. The processes by which systems are assessed should be flexible enough to allow for PC technologies and new technologies that may not conform to the traditional evaluation and development methodologies. While this tailoring should consider the risks and controls necessary to ensure project success, the final methodological blueprint process should not be a barrier to using good common sense. This tailored process should be negotiated and mutually agreed upon by the sponsor, the project support team and quality assurance representatives.

8. A qualified team should be made available. Once the sponsor has indicated a need to assess a new technology, a project team possessing expertise with the technology (or similar systems) and potentially impacted systems, should be identified and assigned to the project. The organization units that need to be involved should be identified at the beginning of the project, introduced to the project scope and objectives, and given an opportunity for input. There should be a clear understanding of responsibilities and accountabilities associated with the members of the project team.

9. A work plan should be developed. As soon as the project development phase is entered, the support team in conjunction with the sponsor, should assemble a detailed, comprehensive working plan. The plan should apply to all areas involved in the project and include milestone dates of key deliverables, project phases and responsibilities for each task. This plan should be co-written, provided to and agreed to by all project participants. It is impossible, at the beginning of a project, to predict every task and contingency. Therefore, the work plan should be a dynamic document subject to refinement and/or enhancement at any stage of the effort. Of course, all modifications to the work plan should be routed to all key players in the project for input and/or concurrence.

Summary

Ultimately, each of the three project goals was accomplished. Authoring and delivery platforms (hardware and software) were identified and tested that meet USAA's training needs. In-house development proved to be economically feasible when carefully planned and implemented, and it also proved to be technically feasible with the talent and resources found within the company. As for instructional effectiveness, the course validated and the students met the training objectives with flying colors.

The obstacles faced by the project team contrasted the groups' focus: human resource development versus system integration and methodology. However, the lessons learned form the bridge that allowed these two teams to work together as a successful team. In fact, the importance of teamwork across all areas of the company was discovered to be the most important finding of this effort.

Predicting Employee Success in High technology Industries: Using the Holland Self-Directed Search in Pre-Employment Testing

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Overview

High technology companies are among the fastest growing internationally, and they typically have expensive and extensive training needs, both pre-employment and on-the-job. High Tech industries invest heavily in pre-employment screening for skills and experience, because the preparation of an employee for productivity requires considerable expenditure of resources. High tech industries face a daunting task in pre-employment screening: choosing employees which will be successful and compatible is of prime importance, especially given these high costs of front-loaded new employee training, and the on going task of on-the-job employee training.

This research posited that "interest" is a very important factor in employee success in a high technology industry. For this particular introductory research, a small high technology industry was chosen due to its high up-front training program, and its existing screening program. The company makes composite engine parts, requiring a high degree of hand-eye coordination, and manual dexterity: workers operate sophisticated material removal and forming equipment.

The training program is highly complex and extensive, consisting of over 150 hours of training before the employees become integrated into the manufacturing setting. The training consists of modules in team building, mathematics and trigonometric functions, and material fabrication and forming.

After the initial employment, additional training is needed to maintain employee skills and knowledge. Because of the steep and long learning curve, and the lack of a pool of trained employees, it is critical that the employment screening process result in the selection of well-matched employees.

Our research hypothesis was that individuals who have a high interest in the work itself as measured by the Holland Self-Directed Search (1989), will become successful employees: portions of the Holland could be used as a predictive measure supporting other pre-employment screening. Interest can be measured pre-employment and used as one of several measures in selecting appropriate individuals for training and employment. This research was designed to determine if there were predictors within the Holland which could be used to ensure a more compatible match before the expenditure of resources on individuals that would not stay with the company as successful employees.

The Holland has been used successfully in low technology employment applications, however its use in high technology employee screening was minimal (Heesaker, 1988).

Methodology

This was a correlational study, using non-random samples of both current successful employees, and potential employees at one high tech manufacturer.

The Holland Self-Directed Search is a self scoring inventory which seeks information in six factors: realistic, conventional, artistic, social, entrepreneurial, investigative. For each of the six factors the SDS seeks responses for Activities, Competencies, Occupations, Abilities and Skills. The Holland has been tested for validity and reliability in a number of studies: Leong and Morris (1989) studied a general populations, establishing coefficients of .963 and .94; Iachan (1984), also studied a general adult population, establishing coefficients of .958 and .92.

The Holland was administered to an entire cohort of employees (Group A, N= 51) who had been identified by the high technology manufacturer as successful both in the pre-employment training and in the job performance in order to establish the baseline data for a profile of successful employees. That is to say, to assess interests among successful high tech employees in order to create a profile, using the Holland.

The Holland was then administered to potential employees participating in initial intake assessments (Group B, N=56). The vocationally related interest characteristics were compared to the baseline profile to determine matches with those employees from group B that were hired. The profile was correlated with individual potential employees as a predictor of employee success. This match was then examined after training and six weeks on the job.

Correlation values were examined using statistical measures appropriate to non-random groups (T-Test, Factor Analysis and Pierson Product Moment). It was not possible to choose the initial research population (Group A) randomly: we wanted successful employees, and we tested all of that cohort. The company is small, therefore the entire population cohort could be tested (N=51).

The Group B population also was not random. It consisted of self-selected candidates for employment: they chose to participate in pre-employment screening. The research acknowledges population skewness; such skewness is inherent in any self-selecting unique population, however the cohort was determined to be representative of pre-employment groups for this company. Additionally, the study was designed specifically to study the use of one instrument by one high technology company; because the outcomes were useful, the research is being extended to other high tech companies.

The company was not given individual data at any time; only composite data was shared after the testing of Group B.

Outcomes

The success profile identified high scoring in the following sections of the Holland:

Activities -- realistic scored the highest: on a scale of 0-11, the high mean score was 8.45, and for investigative 7.1,

Competencies -- realistic (7.9) and investigative (6.98) were the high means.

Occupations -- realistic mean on a scale of 0-14, was 11.3 and at a much lower magnitude, the second highest mean was for conventional (4.3),

Self Estimates -- the highest mean was for mechanical ability (on a scale of 1-7) at 6.33 and for manual skills (6.17). Overall, the Realistic factor was strongest, followed by the Conventional. Some individual items emerged as high values in the profile: in activities, metalworking, mechanical drawing, and operating a computer; in competencies, operating power tools, teaching adults; and under Occupations, machinist, researcher and computer operator. These items became part of the Profile.

Recommendations

Initially, the Holland has proved to be a very useful adjunct to other screening measures for high technology companies. Correlations of scores strongly suggest that the Holland predicts not only job success, but training success as well. Given the high cost of training, using self-reporting measures of interest, skill and occupational interest has proven useful in this setting. Further research will be necessary to make more generalizable recommendations.

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Reflective and Collaborative Writing in Human Resource Development

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The central focus of this discussion involves a process by which experience is gained in the workplace. How is it that an individual enters a profession as a novice schooled in the content of the field and socialized by professional education but lacking real world experience and somehow is, in time, transformed into a competent, experienced professional? What is it that happens to the novice out in the real world? When dilemmas arise in practice, the novice may be unprepared to reconcile personal and professional beliefs and actions. In resolving the dilemmas of practice, the novice gains experience.

Our purpose in this presentation is to explore what goes on during the acquisition of experience and to consider a method which human resource developers and other adult educators might employ to the betterment of their clients and in their own practices.

Reflective Practice

One important consideration in human resource development is employee development, defined by Rothwell and Kazanas (1989) as a process which "cultivates individuals so that their organization and work group collectively possess the knowledge and skills necessary to meet present, and prepare for future, responsibilities" (p. 303). In preparing for the future, it is important that workers reflect on current practices, analyze the assumptions they hold, bring those assumptions to consciousness, challenge them, and then use the process as a way to improve performance. This process is termed reflective practice (Lewis & Dowling, 1992). According to Marsick and Watkins, "the idea of reflective practice is quite compatible with a new focus on continuous learning for continuous improvement in which employees at all levels of an organization are empowered to identify and solve problems" (1992, p. 9).

The past decade witnessed a surge of articles and books utilizing the concept of critical reflection. Although many researchers have written about aspects and applications of critical reflection, Jack Mezirow and Donald Schön are two current authors who have produced significant theoretical works valuable in exploring the concept. In a prefacing article to the January 1992 edition of Adult Learning, which was dedicated to discussing reflective practice among adult educators, Amy Rose noted that "the idea goes back at least to Dewey" (p. 5). Where did Dewey get the notion of critical thinking? We find the answer hinted in Mezirow (1991) and answered in Dewey's writing. Mezirow (1991) cites John Locke's Essay Concerning Human Understanding in his preface to the discussion of Dewey. Dewey quotes extensively from the same Locke essay.

Primarily because of Donald Schön's books on the subject (1983, 1987), reflective practice has been a popular topic in many professions, including adult education . At the heart of Schön's work is the reflective practicum, a method relying on dialogue between the

learner and educator as they ascend a helix of practice and reflection. Other educators, like Mezirow, view critical reflection as an emancipatory effort, where learners dialogue with fundamental belief systems in their lives.

Schön on Reflective Practice

In the topical edition of Adult Learning referenced earlier, Marsick and Watkins stated that Donald Schön "names a phenomenon that many practitioners felt, but had not been able to put into words" (1992, p. 9). Noting the threats to reflective practice, Marsick and Watkins propose a Continuous Work/Learning Model based on Schön's reflective practice theory. Schön's theory advocates critical thinking applied to workplace situations, with emphasis on alternating action and reflection cycles. The added value is in the second cycle, where reflection on the reflection in-action informs the perspective of participants. The fear of exposing the dissonance between espoused theories and theories- in-use prevents people from articulating their critical reflection even to themselves. Reflective practice makes people aware of the assumptions on which they act, the values and norms given priority, and the frames in which they function. Reflective practice makes visible the "art by which practitioners sometimes deal well with situations of uncertainty, instability, uniqueness, and value conflict" (Schön, 1983, p. 50). In Davydd Greenwood's study (1991) of an implementation of Schön's reflective practice, he discovered that the issues most hotly debated by workers were those involving conflicting values. In Brookfield's teaching experience in reflective practice, he says that examining the fundamental assumptions of practice is "a powerful trigger to becoming a more critically reflective practitioner" (1992, p. 18).

Another reason why reflective practice has been long in coming is that action is valued over thinking, which is seen as a passive activity. Although Greenwood asks, "Who would advocate unreflective practice?", he notes that reflection has been viewed as good only "so long as we do not reflect to the exclusion of action" (1991, p. 103). In facing complex, ambiguous, or unanticipated situations in the workplace, however, Schön's reflective practice theory relies on John Dewey's explanation of problematic situations, where the dilemma confronted within its unique context. His reflection-in-action sounds much like Dewey's learning by doing advice. Learning, according to Schön's citation of Dewey, "requires candor and sincerity to keep track of failures as well as successes and to estimate the relative degree of success obtained" (Schön, 1987, p. 312).

Schön's advocacy of the reflective practicum as a learning model, because of its reflection-in-action and reflection-on-action cycles and because of the collaborative reflection inherent in mentoring, was foreseen by Dewey in 1933 when he wrote that the learning of artists should be modeled. Dewey's discussion of reflective thinking in teaching advises that "in conditions of unusual perplexity or repeated error it will usually be a help if conscious attention goes back to such causes as lie in the attitudes and processes of the learner" (1933, p.283). According to Schön, a reflective practicum "must include values and norms conducive to reciprocal, public reflections on understandings and feelings usually kept private and tacit" (1987, p.312).

Mezirow and Critical Reflection in Adulthood

According to Mezirow, "Dewey's definition provides us with a useful point of departure for understanding some fundamental distinctions regarding adult learning" (1991, p. 5). Dewey's definition, referenced by Mezirow, states, "Active, persistent, and careful consideration of any belief or supposed form of knowledge in the light of the grounds that support it and the further conclusions to which it tends constitutes reflective thought" (Dewey, 1933, p. 9). Dewey also clarifies what he means by grounds, as grounds for belief, the evidence, proof, or warrant, by which, according to Mezirow, the validity of the belief is established. Although Mezirow notes that Dewey did not differentiate reflecting on the problem solving process from reflecting on the problem, Mezirow clearly attributes critical reflection to Dewey.

As for other current theorists, Mezirow warns that "while all reflection is inherently critical," distinctions must be made between reflection on premise, process and content. He notes, "the term critical reflection often has been used as a synonym for reflection on premises as distinct from reflection on assumptions pertaining to the content or process of problem solving" (1991, p.105). His description of Schön's reflection-in-action reveals a mixture of premise, content, and process reflection. Mezirow distinguishes between reflective action and nonreflective or thoughtful action.

Critical reflection, according to Mezirow's (1990) model of reflection, is ex post facto in that its focus is on the presuppositions which frame the problem posed. Mezirow is careful to separate critical reflection from immediate action. "It requires a hiatus in which to reassess one's meaning perspectives and, if necessary, to transform them. Critical reflection is not concerned with the how or the how-to of action but with the why, the reasons for and consequences of what we do" (p.13).

An analysis of the way Mezirow utilizes the concept of critical reflection is beyond the scope of this presentation. It is instructive, however, to understand that Mezirow has detailed aspects of critical reflection which allow him to model different kinds of reflective or critical thinking and acting. He then makes use of these distinctions in building a theory of adult development through perspective transformation. His effort is informed by theory from Dewey and critical theorist Jurgen Habermas.

Dilemmas: Learning from choices

The novice in a workplace or professional situation is bearing a double burden. The novice carries around a set of personal beliefs and the position implies a set of public beliefs. In addition to intrinsic beliefs, values, and assumptions which the individual has developed over a lifetime, a complex set of extrinsic social, institutional and workplace beliefs now also inform their behavior. If personal beliefs might be "like a garment that cannot be removed," (Peshkin, 1988, p.17.) then public beliefs are an additional mantel assumed with the profession.

There is a strong likelihood that conflicts will exist between a person's private beliefs and public beliefs. When a situation of practice brings these inconsistent beliefs into focus, choices may be difficult. The everyday process of work may create dilemmas. Although the term dilemma formally means a choice between two equally undesirable decisions, it is intended here "to designate any major point of confused intentionality which seems to call for a decision" (Sloan, 1987, p.93). The resolution of certain dilemmas is guided by the work context and the novice can discover how others facing such a decision have resolved it. The dilemma, however, can be "disturbing or, at least, challenging, in that its resolution could require a transformation of commitments, plans, self-concepts, and central activities" (p. 2).

According to Sloan, decision models "abstract the dilemma from the contexts which breathe life into it" (p. 69) and change the decision by narrowing it. They consciously fail to examine all of the aspects that contribute to the dilemma, especially personal beliefs. When individual beliefs conflict with the publicly espoused beliefs, then formal decision models tend to factor out personal beliefs in favor of forced conformity.

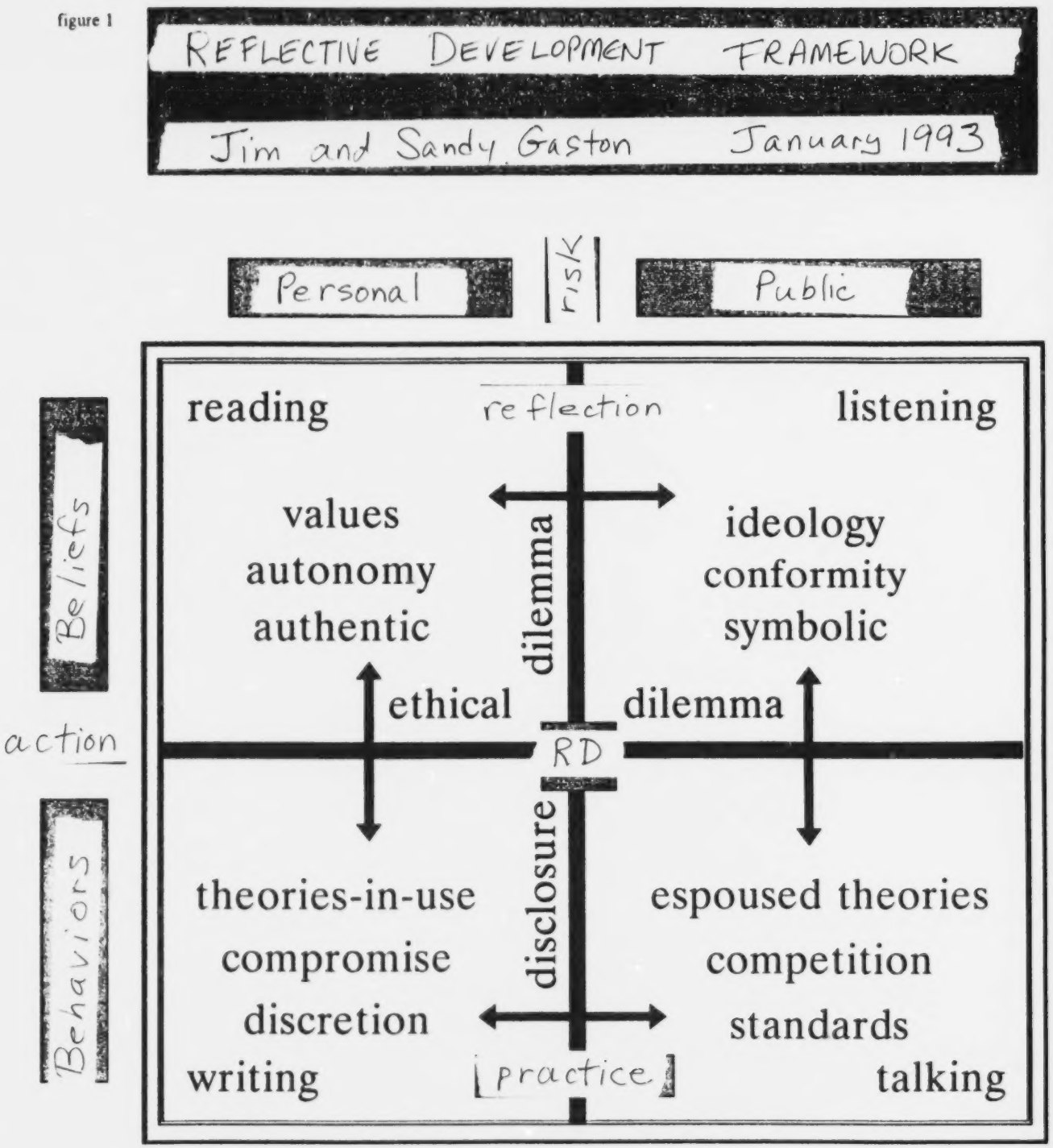
The Reflective Development Framework

Two types of dilemmas are evident from Schön's work on reflective practice and Sloan's study of life decisions. Situations arise which require people to disclose their personal beliefs in spite of the contradicting public beliefs of a profession or work position. Situations can also create ethical dilemmas where action is inconsistent with beliefs.

As an individual reflects on a situation where personal beliefs and public beliefs are at odds, a threshold of risk is identified. The line either represents a barrier or it must be crossed before the disclosure dilemma is resolved. Similarly, when personal or espoused beliefs must be acted on in order to address a situation, a prescribed action not in keeping with those beliefs requires acknowledgment of an ethical dilemma. The ethical dilemma either must be avoided through inaction or resolved through action.

The Reflective Development Framework (Figure 1) illustrates a useful way to view these personal and public domains of belief and behavior.

figure 1



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The process through which experience is gained occurs as a novice reflects on personal and public beliefs, acknowledges the dilemmas of disclosure or ethics, and then reconciles one domain with the other or chooses not to do so. In terms of Schön's work and the Marsick and Watkins model, learning from that choice is reflective practice. Through subsequent iterations of dilemma resolution, the novice becomes experienced. The challenge of human resource developers and adult educators is to create opportunities for novices to resolve these dilemmas in a low risk, nonthreatening environment.

Writing to Learn

One result of the corporate ideology of human resource development and American education is that demands on time are answered through ubiquitous oral methodology. No lasting record of our learning dialogue is ever created. These rich learning dialogues are not created in a durable, tangible medium which invites the participants to revisit learning and reflect on the process. Telephone calls, for example, are more efficient than letters, but we no longer have bundles of letters to reread and cherish. We must rely on memory to reconstruct past dialogue and we interpret intersubjective meaning filtered through current knowledge and values. It is too time consuming and too troubling to rediscover the intellectual pathways which brought people to our current work settings. Instead, we must get on with the program, without the tools of critical reflection, arriving at another new plateau without recording the journey.

Although oral methodology is pervasive in human resource development, two concerns should be voiced. The first is that the preference of discourse over writing, especially in the public domain, is not gender neutral. Feminist research has shown that men and women do not share the tradition of discourse equally (Gannett, 1992). Conversely, men are disadvantaged in written communication.

The second concern to be noted is that the increasing use of electronic written communication through computer networking and facsimile transmission has unlinked the dimensions of time and distance in learning. The synchronicity of written dialogue no longer requires proximity. People can also be in the same room and communicate in writing anonymously (Johansen, et. al., 1991). In the following portion of the presentation, we will explore the use of reflective writing in human resource development.

Reflective Writing

One tool which can be used by organizations to encourage reflective practice is reflective writing. The process of reflective writing, according to McAlpine, "enables us to engage in reflection intentionally and somewhat systematically. We write about, read, and re-read our impressions of the world of practice and thus, come to better understand how our intentions and actions and their outcomes can be integrated into a coherent practice" (1992, p.15). Three types of reflective writing in journals can be used in human resource development. Journals are simply chronologically sequenced informal writing. These journal types include personal writing, dialogue writing, and collaborative writing.

Personal Journals

Personal writing, including personal journals, memoirs, and autobiographies, allows an individual to reflect critically on practices which have been successful, as well as those that need improvement. In a personal journal, beliefs can be explored and dilemmas can be confronted in private but the record of the decision remains for later reflection. Baldwin describes the special vantage point of a personal journal: it acknowledges a many-sided self ... and makes it possible for one part of ourselves to write and one to read, so that one part may ask and one may answer, one may act and one may reflect, one may explore and one may comprehend the exploration (1977, p. 4).

Dialogue Journals

The second type of reflective writing, dialogue writing, may be used most effectively in organizations to foster critical reflectivity in a training situation. The writing may be used to create professional private conversations between the learner and the trainer, allowing learners to pursue questions with the trainer that they might be uncomfortable asking in a group. It also allows the learner the opportunity to recognize growth during the learning experience. Dialogue writing in mentoring relationships is another example of dialogue journal use. According to Sloan (1987): other people can also serve to instigate deliberation. An individual may have tucked a dilemma away, hoping not to have to face it for a while, only to have a friend ask, "Have you decided yet?" Some characters are predisposed to rely entirely on intersubjectively prompted deliberation to carry out their decision making. Many decisions are handed over to a person by others who are able to sensitize them to a dilemma (p. 105).

Collaborative Journals

The last type of reflective writing is collaborative writing. Collaborative journaling can be a tool for fostering critical reflection within a work group or a professional association. The use of a collaborative journal, made practical with the advent of computer networking and electronic mail, provides a forum for consideration of problematic issues. Because the contributors to the journal are able to write anonymously, the discussion of conflicting opinions may be less restrained but also less acrimonious in the journal than in face-to-face confrontations. Another benefit is that each person's ideas are considered on merit alone. Those individuals most likely to be ignored in meetings due to manner, gender, or ethnicity are able to have an equal opportunity to have their ideas considered by the group.

With the increasing numbers of organizations that have offices in diverse geographic locations, the use of collaboration and computer networking is growing in order to provide opportunities for an increased sharing of expertise in the workplace and among professional colleagues. Increasing demands on professional associations to provide geographically dispersed but meaningful opportunities for continuing professional education provide another avenue for collaborative reflective writing. According to Kirkpatrick (1992), some of the new software may be able to link "departments, or colleagues in different locations, or even entire corporations in ways that vastly improve the efficiency and speed of collaborative projects" (p. 93). An example of this is the new groupware computer software, which relies on computer and fax technology to assist in real time reflective writing among colleagues.

Reflective Writing in Action

Reflective writing in human resource development should be viewed as a tool to increase productivity, challenge assumptions, and create a climate for change. Sloan (1987) recognizes that instructors and human resource developers are the agents of that change when he states: Humanistic psychologies are generally flawed by their attempt to attribute processes of "growth" to "natural" forces. In our study of decision narrative, it is increasingly clear that growth results from experience in interaction and self-reflection (p. 107).

Through the use of reflective writing a novice can face the dilemmas of practice, growing in experience and reconciling the conflicts of personal and public beliefs.

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Evaluating an Intelligent Computer Aided Instruction (ICAI) Authoring System: The Lackland Air Force Base Test Bed

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Abstract

This current research outlines a paradigm for evaluating the applicability, usability, and teaching effectiveness of an intelligent tutoring system. The tutorial will be produced using a new authoring environment called Microcomputer Intelligence in Technical Training (MITT) Writer. Variables to be evaluated will include interface, functionality, breakability, one-to-one mapping of software specifications,tutoring abilities, and validity issues.

Forward

Microcomputer Intelligence for Technical Training (MITT) is a multi-dimensional set of software tools engineered expressly for the development and delivery of technical knowledge and skills to Department of Defense maintenance technicians. MITT Writer is the authoring shell which is used to produce an intelligent tutoring system (ITS). The MITT Writer end product, or ITS, is the computer-based training aid used to both broaden technical knowledge and strengthen troubleshooting skills of the student on technically complex military equipment. Both of these products were developed by the same scientists and function on IBM or compatible personal computers in a DOS environment.

Although both MITT Writer the shell, and MITT, the tutor, have been extensively and exhaustively tested within the Intelligent Training branch of the Armstrong Laboratory at Brooks AFB, San Antonio, Texas, neither product has been field tested. The intent of this presentation is to outline the procedures that will be implemented to evaluate this new and exciting training technology.

Background

Computer-Aided Instruction (CAI) is a mature technology used to teach students in a wide variety of domains. The introduction of Artificial Intelligence (AI) to the field of CAI has prompted research and development efforts in an area known as Intelligent Computer-Aided Instruction (ICAI) (Regian, 1992). CAI and Computer-Based Training (CBT) have been used by training developers within numerous training and educational settings for several generations to assist in the delivery of instruction to a wide variety of students in an extensive assortment of subjects or domains. Although ICAI is viewed by some (Dede and Swigger, 1987) as a "potential rival to CAI," ICAI appears to be emerging as a logical extension and addition to the earlier forms of CAI and CBT. Data from educational research indicates that conscientiously individualized instruction is superior to conventional group instruction (Bloom, 1984, Woolf, 1987). CAI is incapable of individually tailoring instruction for its students because it cannot create inferences about its them. Most CBT is self-paced and permits branching to various screens and paths within

the program, although all possible branches, navigation through the branches, and the rewards or consequences for following each branch need to be individually programmed by the author. ICAI implementations however can modify generated behavior by an inferred "model of the student's current understanding of the subject matter" (VanLehn, 1986). This capability is dependent upon the complexity of the student or instructor model.

It is perhaps prudent to pause at this point to redefine the terms used within this presentation. Computer-Aided or Assisted Instruction and Computer-Based Training (CAI and CBT) are terms pertaining to the same activity; that is, the delivery of instruction on a computer. This type of instruction is generally static and would appear the same to all students without regard to individual student differences and their divergent needs. Intelligent Computer-Aided Instruction and Intelligent Computer-Aided Training differs from CAI or CBT in that it possesses the capability to address the needs of the individual students and presents individualized instruction based on those diverse needs. Microcomputer Intelligence for Technical Training (MITT) and its authoring shell, MITT Writer are the subjects of the research described by this presentation. Intelligent Computer Aided Training Testbed (ICATT) is the Air Force's Armstrong Laboratory project under which the research is being conducted.

Although there exists a large body of research about ITSs in general (Burns & Capps, 1988, Wenger, 1987) and MITT and MITT Writer in particular (Johnson, Hunt, Duncan, and Norton, 1988, Norton, Wiederholt, and Johnson, 1991, Wiederholt, 1991, Wiederholt, Norton, Johnson, and Browning, 1992), little research has been performed to evaluate the pedagogical effectiveness of MITT. The intent of this research to evaluate the instructional effectiveness of an ITS, specifically MITT, and, simultaneously assess the effectiveness of MITT Writer as an authoring shell for MITT tutors.

The field test site will be at Lackland AFB, San Antonio, Texas at the Air Education and Training Command (AETC) Cryptological Technical Training School. Mr. Mike Rigg, Chief, Training Technologies Element, is the point of contact. Mr. Rigg identified the AN/UGC-141(V) Teletypewriter Set as the first domain for a MITT Tutor. The AN/UGC-141 is a microprocessor-controlled telecommunications system containing the following major sub-components: Teletypewriter Control Module, Teleprinter, Keyboard, Visual Display Unit, and a Magnetic Tape Storage Device. The first tutor will be named the "MITT-141"

The training goal of the Cryptological Technical School is to provide students with the requisite system knowledge and trouble-shooting skills to facilitate their ability to maintain, and identify and repair cryptological system problems in the field. For this research project, the MITT-141 tutor will be used to supplement this training.

Research Questions

As with any research, a clear statement of the issues to be considered, and the questions that need to be answered must be delineated. The issues involve a test of the two software systems, MITT Writer, the authoring shell, and MITT-141, the tutor. The authoring shell must be tested for interface issues, functionality, breakability, maintainability, and one-to-one mapping of contractor specifications. For each of these issues, a research question(s) must be applied (Table 1), and some treatment devised. The research questions then become the basis for this testbed. One such question might be, "What is the software supposed to do?" A research topic then associated with that question

might be, "Does it do what it is supposed to do?" The issues and their related research questions for the authoring shell follow.

Interface

How long does it take the author to learn to build tutors using MITTWriter? MITT Writer was designed so that tutors could be developed by practically any subject-matter expert or curriculum developer. Programming skills in such languages as C++, Pascal, or ADA, for example, are not needed to use MITT Writer. Therefore, it is hypothesized that a non-programmer developer can learn to use MITT Writer with approximately one week of training. It is also hypothesized that the author will be fully proficient in MITT tutor development at training completion. It is further hypothesized that the author should be able to plan a tutorial, produce the necessary graphics, and construct a working tutor with little outside support.

How difficult is the interface design to learn? This question will be answered quantitatively by collecting data on the number of times the author must ask for advice on how to perform some function or action, even after the one week training period. User perceptions are always important in any interface evaluation. The author will be asked questions about ease of use, preferences (keyboard and mouse entry techniques), screen colors, on line help applicability and completeness, and other interface related issues. A questionnaire will be developed for this purpose by qualified in-house user interface and computer software military and contractor personnel.

Functionality

This involves an evaluation of the tools and facilities provided by the software. For instance, those tools provided to produce pop-ups and screen links, build graphical flow regions, produce and present advice, display sensor values, and link components (parts) should all be evaluated to ensure that they all do what they are supposed to do in accordance with contract specifications.

Does the authoring environment produce the expected tutor? Is the output of the authoring environment consistent with the author's input and expectations? If for instance, the author defines a flow region, does that flow region work correctly and in the designated screen location, or are there disparities between the authoring environment design and the end product. This requires an evaluation of the authoring environment input fields against the tutor or authoring environment output. Finally, what couldn't the authoring shell do that the author wanted it to do?

Breakability

What goes wrong? When does the system lock up? If it does, what causes it to do so? Is a specific version of the DOS operating system needed? Is the MITT software compatible with other software operating on the same system? Do certain hardware configurations conflict with MITT? The question, what goes wrong?, cannot be answered totally by one study. Data will be collected to providing feedback to those maintaining the software, but due to ongoing changes in system software and hardware configurations, there can be no clear-cut answer. However, this is an extremely important issue that must not be overlooked.

One-To-One Mapping

The software engineers stipulated that this software would perform in a certain way with specified hardware configurations. If a checklist were constructed which included all the claims made by the contractor, would the software would meet each claim. Thus, the question is, "does the software meet government expectations?" This is an internal test of the product performed along side the external test. Just as there are questions relating to the authoring shell, there are also those relating to the end product, the tutor. These questions include those which apply to the authoring environment, but also require the following issue to be addressed:

Tutoring Abilities

Does learning occur for students using the software? This is a more difficult a question to answer than might be expected. Since the tutor is produced in an authoring environment, it is to a degree only as good as the author. Understandably, the quality of the tutor is dependent partly on the MITT Writer authoring shell and partly upon the author. Using MITT Writer, the author has the capability of producing a very good tutor or a very poor one. MITT Writer permits that freedom. Regardless, there exists a need to evaluate the potential of the tutor to teach. There are two ways to do this. One is to compare a student's knowledge of troubleshooting after using the tutor to his troubleshooting knowledge before he uses the tutor. A written test administered to the student prior to his/her using the tutor would establish a baseline and will constitute a within model. The second approach is to compare the students' knowledge after using the tutor to a control group who have not used the tutor but have been provided the same trouble shooting skills in a classroom environment. This comparison will constitute a between model. Both tests will be conducted.

Validation

There is a need to validate that the pedagogical effects noted are directly related to tutorial augmentation. In other words, students whose instruction is supplemented by the tutor should obtain different scores on some end-of-course test than those students without tutorial enhancement. The end-of-course test must be validated to ensure that it is measuring what it is supposed to measure - knowledge based skills. The tutor must be validated to ensure it is augmenting existing classroom training provided to the control group, and not teach anything unavailable to the control group (unaugmented group). So the question here is, "Are the tutor and written test used in this research valid for their intended purpose?"

TABLE 1. Relevant Issues and Questions

ISSUES	QUESTIONS or APPROACHES
Interface	How long does it take to learn? How difficult is the interface design to learn?
	What are the user's perceptions?
Functionality	Evaluate the tools and facilities provided by the software.
Breakability	What goes wrong? When?
One-to-one mapping	Does the software meet contractor claims? Have government expectations been met?
Tutoring abilities	Does learning occur for students who use the tutor?
Validation	Are the tutor and end-of-course exam valid for their intended purpose?

Methodology

It is neither practical nor feasible for at least 30 or more people to build or author tutors such that a statistically sufficient sample size may be obtained. A large sample is preferred, and in a longitudinal sense, data will be collected as more test beds become operational. For this study, only one individual will be using the MITT Writer authoring shell. This person will be trained at the Armstrong Laboratory, Brooks, AFB,TX by qualified Intelligent Training Branch personnel, and will subsequently be dedicated to this project following training. This person is assigned to the test bed by his parent organization, the 340th Technical Training Group (TTG), for the duration of the study.

The author will be required to maintain an authoring journal specifying how frequently he requires assistance from lab personnel, what the nature of the problem or issue is, and how the problem or issue is resolved. Correspondingly, Armstrong Laboratory staff that provide assistance will keep their own journals so that the two logs can be compared to provide accurate data for the study.

The author will be required to record his perceptions, likes,and dislikes in his journal regarding interface issues. He will also complete a questionnaire on the interface at two points during the study. A questionnaire will follow the development of Versions One and Two of the test-bed tutors and will provide additional anecdotal data to the researchers.

The author will address issues on the tools and facilities provided by MITT Writer in his journal. The questionnaires will also consider these issues and will ask questions about the frequency of tool usage and that tool's ability to perform the required function as

the author expected. The author will also note those tools he would like to have but were not provided. Sample questions like: "Was there anything you wanted to do, but were not allow to do based on some limitation of the software?"would appear in the questionnaire.

A problem log will be maintained on how often the system crashes, locks up, or causes the loss of data. Compatibility issues (software and hardware) as outlined earlier will also be noted in the problem log. It is hypothesized that the shell is very durable, but if it fails, the research team must know when,why, and how the problem is resolved.

This first tutor will be evaluated by the author to ensure it is what he expected. If there are unexpected results, the author will be required to determine the cause. If this unexpected result is based on the author's design, the author will fix it. Whatever the outcome of the first tutor, the author will note discrepancies and impressions of the tool in his journal.

A checklist will be constructed from existing contractor documents, specifications, and manuals which specify system design. This checklist will then be run independently by both Air Force military and civilian, and contractor personnel. The expectation is that all functionality and specifications described by the software engineers should map one-to-one with the provided software.

The MITT-141 tutor will be produced in two versions. Version One will be tested by one class (approximately 10 students) for accuracy and completeness. The author will then make any necessary adjustments and produce Version Two. This is necessary for two reasons. First, this ensures a complete and accurate tutorial, and second this tests the concept of maintainability. An authoring environment should not only provide the user with the ability to produce a tutor, but also permit prompt and inexpensive maintenance. The tutor should have at least ten different problem sets. This quantity of problems will provide enough variance to evaluate the ability of the tutor to teach and the quality or effectiveness of each problem scenario. This is a simple matter of measuring the variance on the final test against both the tutor, and each problem set within the tutor.

All students in one class will take a written examination on the first day of class. Written test questions will be derived from information provided in both the tutor and the classroom. The results of this test will be used to establish baseline knowledge for each student. During the two-week class session,all the students will receive normal classroom instruction but only half the class (N/2), the treatment group, will use the tutor for five half-hour sessions. At the end of the two week course, a second examination will be administered to evaluate any differences in scores between those students receiving tutorial and classroom instruction and those students receiving classroom instruction only. This test will be carefully written to evaluate trouble-shooting skills and, to a degree, procedural knowledge relevant to trouble shooting.

After the tutorial has been revised, an evaluation of Version Two of the tutor will begin. This evaluation paradigm will be the same as the one used in the Version One test. The tutor will be administered to half of the students in each of six consecutive two-week classes with sufficient time allotted to ensure that each student will solve each problem set at least twice. The students will all take the pre- and post- written tests, and the difference in within scores will be used as a measurement of the effectiveness of tutorial intervention. This is a simple test which may have significant impact.

The authoring shell is being evaluated for usability,functionality, and accuracy. There is every reason to believe that the existing shell will live up to expectations. All results, expected and unexpected, discovered in the software and tutorial results will be reported in an honest, open manner. If the authoring shell performs as expected, the final

determination will be that the product works. Evaluation of the tutor in terms of functionality alone will indicate that the technology works if all the functionality is available and the interface issues are indicated as positive.

This project timing should run as follows. About three months will be required to produce the first tutor. Two-to-four weeks will be needed to administer the first tutor to one class and evaluate the results. One to two weeks will be needed to produce Version Two. Six months will be required to administer version two, and four months after that, the data will be analyzed and reported.

Technical training in the military has followed the same path for many years. Paper-based courseware and limited CBT have been used with few recent innovations. As the technical complexity of military hardware and weapon systems grows, so grow the demands on the technical training developers. It is hoped that MITT and MITT Writer can assist tomorrow's training developers to produce realistic and robust tutors that will address this growth and provide highly-qualified technicians fora 21st century military.

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Revolution in HRD Instructional Design

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New developments in instructional design (ID) promise increased usefulness for this key element in Human Resource Development (HRD). This presentation gives perspective to current discussions by setting them in historic context and by summarizing criticism of earlier approaches to ID. It describes a new conceptual base of constructivism and summarizes what is being said in the field about how constructivism would impact several of the typical components of ID. The paper concludes with an attempt to identify the HRD needs that would have to be met in order to produce a workable constructivist instructional design (IDc) model.

Historical Context

Shrock (1991) has presented an overview of the history of ID, beginning with the use of individualized instructional plans in the late teens and 1920s. In the 1930s, the use of behavioral objectives became popular as a result of Ralph Tyler's Eight Year Study. World War II brought the development of instructional media to meet the need for rapid training of military personnel. Instructional systems, emphasizing evaluation and feedback, were introduced in the 1960s and were refined in the 1970s with the addition of needs assessment to the ID process. ID models began to proliferate so that, by 1980, 60 models could be identified. The most significant development in the 1980s was the rapid growth of the use of microcomputers in instructional design. These steps were among the ones that led to what is now being called First Generation Instructional Design (ID1).

Despite the contributions of ID1, several limitations have been identified. These limitations include a lack of use of integrated wholes in content analysis; limited prescriptions for knowledge acquisition and course organization; theories which are essentially closed systems; failure to integrate the phases of instructional development; emphasis on teaching pieces rather than integrated wholes; passive rather than interactive instruction; construction of presentations from small components; and design and development practices which are labor intensive (Merrill, Li, & Jones, 1990a).

As ID1 is used in HRD, these limitations may result in education or training that cannot be transferred beyond the learning situation or from one work situation to another, that does not help the worker know when to apply certain knowledge, or that produces knowledge of isolated bits of information that cannot be formed into new sequences as work demands change. It also demands major efforts by program designers when they take seriously the principles of extensive testing to assure specified levels of proficiency. It also demands considerable command of

technical instructional design processes, when trainers may have greater interest in human relationships than in technical processes.

In an attempt to overcome some of the limitations of ID1, several new models of instructional design have emerged (Merrill, Li, & Jones, 1990b). Many of these models attempt to blend behaviorism and cognitivism in designing instruction that is learner-centered, yet goal-oriented (Rieber, 1992). These newer models, too, have drawn criticism. Merrill's proposed model of Second Generation Instructional Design (ID2), for instance, has been criticized for being too dependent on technology. (Kember & Murphy, 1990).

A New Basis for Instructional Design

All of these models, even most of the newer ones, are dominated by instructional goals that reflect the belief that there is a single, objective reality. (Rieber, 1992). Some authors have called for a new approach to instructional design that is based on the constructivist paradigm, which defines differently how learning occurs and what is to be learned (Duffy & Jonassen, 1992a).

Those who take a constructivist viewpoint differ with behaviorists in defining (1) what can be known, (2) how learners are certain about what is known, and (3) what are the ways of learning (Candy, 1991).

(1) What can be known is not some absolute reality, say the constructivists; individuals each have their own understandings of their experiences and environment. They each construct their own "reality."

(2) On the other hand, learners are certain about what is known to the extent that they agree with one another in defining reality. Thus, what is known is socially constructed. Language itself, for instance, is an agreement among speakers or readers that certain sounds or sets of marks refer to the same objects or ideas. The ideas constructed from language are also developed, modified, and affirmed by groups of people.

(3) The ways of learning are the practical aspects of learning: the learning methods and the rules that have been socially constructed to define how knowledge will be socially constructed within various fields of learning.

While these three aspects of educational philosophy cannot be taken in isolation from one another, it is the third aspect, the ways of learning, that most directly impacts instructional design. A constructivist view of learning in HRD assumes that workers build total understandings of a job to be done; as they learn more, they change their understanding of the whole job, rather than just adding new information. They must make sense out of what they are learning; and that "sense" must be defined by each individual. No matter how regimented the learning experience, each learner incorporates the new learning with past experiences to produce an understanding that is different from what anyone else has. At the same time, people learn with and from each other. Those who go through a training session together will (if given the chance) develop a group understanding. Even when the trainer believes the same information is

taught to two groups, interactions in the groups and with the instructor will make the learning different for each group.

A constructivist approach to instructional design in HRD contexts would use teaching/learning methods that have the workers learn new job skills in contexts that are as close to the real situation as possible. Thus, simulators are good teaching tools, for instance. Instead of teaching skills and sequences of skills, however, the trainer would focus on helping the worker to think like someone who is an expert on that job. Emphasis would be on meaning and context, and not on information in isolation.

Reconstructing the Instructional Design Process

Thus far, constructivists have only reached the point of saying broadly how this different theory base should affect the typical parts of the ID process, such as task analysis, defining of objectives, choosing and sequencing of teaching-learning activities, and defining of methods and purposes of assessment. We now focus on three of the best-known aspects of traditional instructional design--objectives, instructional strategies, and evaluation--in order to show what is being said about how the process might be changed (Duffy & Jonassen, 1992b).

Objectives

One of the most widely known characteristics of ID1 is the behavioral objective, a precise statement of what the learner will be able to do at the end of the instructional sequence. Constructivists reject the idea of behavioral objectives, not just because they require a teacher-observable behavior, but also because they are too deterministic and too atomistic. They specify exactly what the learner is to learn and that every learner will learn the same thing; they divide the learning into such small pieces that meaning is destroyed.

Constructivists consider in advance what will be the domain of learning, the general content area on which the learning experience will focus. They are unwilling to say precisely what the learners should derive from the experience or that each learner should derive the same thing (Bednar, Cunningham, Duffy, & Perry, 1992).

To the extent that constructivist teachers specify in advance what should be the outcomes of learning, they do not focus on individual pieces of information or individual skills. Their content focus is the structure of their discipline. They more often focus on the need to acquire process skills within a specific context (Candy, 1991).

Constructivists believe that learning objectives may arise within the learning experience, in the interaction among teacher/facilitator, learners, and content. Part of the learning process is deriving the questions that need to be answered, constructs that need to be clarified or enhanced, and process skills that need to be acquired (Bednar et al., 1992).

Constructivists do share with behaviorists the understanding that objectives affect both learning activities and evaluation of learning. The differences in approach to specifying objectives foreshadow differences in learning and evaluation activities which the two theories produce.

Instructional Strategies

Specific strategies and methods of implementation of the constructivist approach are still emerging. However, several themes seem to be present in the literature.

The first theme involves the use of activity in authentic tasks or real world contexts to situate cognition. Consistent with the belief that all knowledge is constructed and re-constructed by the learner, constructivists view concepts as continually evolving with each new use, activity or situation. Concepts are viewed as tools which are enhanced when used in real-world environments rather than acquired in foreign environments. Thus, constructivists take every opportunity to situate learning in authentic activities that serve to enculturate the learner in the domain being studied. Constructivists attempt to engage learners in activities that practitioners in a certain field would actually participate in. (Brown, Collins & Duguid, 1989). Examples of these activities might include projects based on actual data collected in an institution or community, dialogue with experts in a field, and fieldwork or internships. Case studies and role plays depicting authentic situations may also be used.

Use of the cognitive apprenticeship method is another theme in the constructivist literature. Cognitive apprenticeship is similar to craft apprenticeship in that the goal is to enculturate learners into authentic practices in a certain field through activity and social interaction. Cognitive apprenticeship is a way to show students how to think and see the world through the eyes of a practitioner. (Brown et al., 1989). An example would be a manager thinking aloud in order to decide how to handle a problem. Part of the learning is seeing how the manager recognizes and deals with his/her own mistakes in problem solving.

Assessment

Since the assumptions constructivists make about how people learn are fundamentally different from those made in ID1, it follows that constructivist perspectives on assessment will also be dramatically different. Assessment in constructivist learning environments is a complex issue that is not easily resolved.

In ID1, goals and objectives serve as the basis for assessment. Constructivists believe, however, that the instructional design process should be more goal free. Constructivists believe that setting specific goals before the learning process begins may bias both the learning process and the evaluation. They assert that providing criteria for referencing evaluation will lead to learning and student activity that is driven by the instruction rather than allowed to emerge from the instruction (Jonassen, 1992).

The belief that knowledge is constructed by learners rather than transmitted by teachers is fundamental to the constructivist philosophy. Therefore, constructivists believe that assessment should focus on learning outcomes that reflect the intellectual processes of knowledge construction. Examples of these learning outcomes may include the creation of new goals and methods of learning and solving relevant problems. Encouraging learners to take a stance and defend their position has also been advocated as a form of constructivist evaluation (Jonassen, 1992).

The constructivist perspective and ID1 are similar in the belief that assessment should be incorporated into instruction. However, the two perspectives differ in the reason for integrating assessment. In the ID1 process, integrated assessment is used by the teacher to determine whether the learners have acquired the elements of knowledge needed to progress to the next step in the learning process. Constructivists, on the other hand,

focus on the mental processes of learning and wish to determine what the learner has learned to a certain point. Constructivists believe that it is essential for the learner, as the constructor of knowledge, to reflect on the knowledge that has been constructed. Constructivists use this metacognitive awareness along with evaluative guidelines to keep both the learner and teacher apprised of student progress (Jonassen, 1992).

Assessment in the ID1 process may be based on an instrument that is designed to be as uncontaminated by context as possible. However, context is an important element in constructivist assessment. Just as constructivists believe that instruction should occur in rich, complex, real-world contexts, they believe that assessment should also occur in these contexts. Since the learning is embedded in realistic or actual tasks, constructivists believe that assessment criteria will emerge naturally from these contexts (Jonassen, 1992). An essential tenet of constructivism involves the presentation and development of multiple perspectives in the learning environment. Similarly, constructivists advocate the acceptance and incorporation of multiple perspectives in the assessment process. For example, a panel of evaluators might be used to gain multiple perspectives (Jonassen, 1992). Multiple learning outcomes and the use of multiple evaluative criteria would be acceptable in a constructivist environment. It is important to note, however, that constructivists would not necessarily place equal value on all outcomes. Two elements would be important: (1) that the learning outcomes or perspectives are effective in working in a particular area (instrumentality) and (2) that the learner can defend his or her position or judgment (metacognitive skills) (Bednar et al., 1992). While focused on assessing the process of learning, constructivists realize that the products of learning may also need to be assessed. When assessing products of learning, constructivists advocate use of a portfolio of products rather than a single product. The products in the portfolio could reflect student progress at different stages of the learning process and may reflect the use of a variety of media. For example, a portfolio might include written journals and papers, drawings, and audio or videotapes produced by the learner. Each of these products would be assessed in a slightly different way and possibly by different evaluators (Jonassen, 1992).

Dealing With the Real World of HRD

If IDC is to be useful in HRD, much more development of ideas is needed. Guidance for planners must be as specific as the constructivist paradigm will allow. In addition, planners must understand the personal skills needed in order to function effectively with IDC and must know how to develop those skills. The issue of accountability must be addressed: How can learning be measured and reported in ways that are meaningful to decision-makers at higher levels of management? Theorists must also answer how this theory can be used when it seems that intended outcomes must be precisely measured, such as when physical safety is involved.

While much remains to be done, the needs should be seen as a challenge to theorists and practitioners, and not as evidence that there is nothing worth pursuing.

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A Model for the Development of Quality Foreign Language Programs in U. S. Companies Responding to a Globalized Economy

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Introduction

The rapid growth of international trade in the last fifteen years has resulted in a renewed interest among U. S. multinational firms in developing foreign language capabilities of their employees. Companies investing in other countries or exporting goods and services to other countries are increasingly interested in the elimination of language related barriers to doing business. In addition, foreign companies who employ U. S. nationals require a second language proficiency.

This need for employees with foreign language skills is expected to grow even stronger as more U. S. multinational companies access the United European market, especially with countries of Eastern Europe where opportunities are increasing daily. The soon-to-be- implemented North American Free Trade Agreement (NAFTA) will stimulate major growth in global competition as the U. S. attempts to attract not only the giant European consumer market estimated at 325 million, but the expanded north American market adding some 130 million consumers to its present domestic market.

Some American companies with overseas operations have tried to solve these problems by providing their employees with specialized training both in cross-cultural issues and in language. According to Inman (1985), U.S. companies have traditionally contracted with commercial language schools (46.3%), private individuals (14%), academic establishments (7.4%) or implemented their own in-house training programs (12.3%). However, the hours devoted to language training in these latter programs averaged 108.5 hours (Inman, 1985) or less (Seabrook and Valdes, 1988).

In spite of these programs, American firms continue to experience a 25-40% expatriate failure rate, compared to a failure rate of only 10% for Japanese expatriates (Hogan & Goodson, 1990). Harry Obst, Director of the Department of State's Office of Language Services, is quoted as saying, "...the American ignorance of foreign languages and cultures is costing the U.S. over $50 billion a year (Wolniansky, 1989)."

In sharp contrast, Japanese firms invested much more time and massive sums of money for in-house language training (Holden, 1989; Horton, 1987). Like the Japanese, European firms such as Siemens AG and BASF AG Chemical Corporation have made a serious commitment to language instruction, providing 144 to 400 hours of in-house instruction (Basta, 1991; Monahan, 1989; Freudenstein, Beneke & Ponisch, 1981). These findings suggest that proactive and committed in-house programs are more effective than reactive, short-term contract solutions to training.

Although much has been written about developing curricula for university language programs, especially applied language or languages for special purposes (LSP) programs, little has been published concerning in-house language training programs designed for professionals in business and industry.

This paper proposes a model for developing effective foreign language training programs within the business and industrial setting. The model is based on an extensive review of the literature describing current language training programs within business, academia and the government sectors. By identifying elements common to programs known to be successful, and by selecting and generalizing curriculum development principles from successful programs, the authors have developed what they hope is a useful model for designers of foreign language training programs in multinational firms. The authors intend that their model be of use especially to companies whose employees are unable to pursue intensive language training in the host country.

Methodology

A review of successful programs in a variety of settings, then, provided the data of analysis. Case studies of successful language training programs in business, government and academic settings were reviewed. Commonalities of successful programs were identified, relationships between these commonalities and current linguistic theory were established to provide the foundation of a model for language training program development in business and industry. Conceptually, it was decided by the researchers that a heuristic framework for a program development model should contain information in the areas of 1) needs analysis, 2) learning outcomes, 3) instructional materials, 4) instructional methods, and 5) evaluation procedures.

Results of the Study

Needs Analysis

The most sophisticated examples of needs analysis among in-house training programs were found in Europe. Clearly, the ultimate goal among these companies was to benefit the organization. On site training programs, even without permanent staff assigned as language trainers, were able to form teams of managers and, when available, employee expatriates to conduct thorough needs analyses. Often, the best data for guiding the design of a training program can be obtained only from those who have had experience abroad, especially from those who failed in their assignments in the sense of having to terminate early.

Particularly successful were programs such as that conducted by Credit Lyonnais which had a full-time language expert as part of the company team who had knowledge of the corporate culture and had immediate access to changing information related to company, job and trainee language needs (Finel-Honigman, 1986).

Ford-Werke used a three-level needs analysis. Conducted by in-house experts, the analysis included 1) needs identified as company-wide, related to overall goals of the firm and related to specific corporate culture; 2) department and job specific language needs; and 3) employee language needs. From these three levels of needs, Ford-Werke formulated performance objectives for each employee (Thelen and Reinhold, 1981). The Association for the Exchange of Experiences on Foreign Language Teaching in Industrial Firms (ERFA or Erfahrungsaustauschring Fremdsprachen in der Wirtschaft) identifies a fourth level--the needs of the trainee's family (Ponisch, 1981). ERFA companies then provided whatever training they considered necessary for family members. Biersteker (1986) describes the use of the ACTFL oral interview as a means to generate a proficiency profile of a trainee that could be used in diagnosing needs.

If European exemplars such as the ERFA group and Credit Lyonnais could be considered at one end of a continuum, academic programs, even the most exemplary, should be considered at the opposite end of the needs analysis continuum. Although academic programs such as the Languages for International Professions Program (LIPP) at Arizona State University conducted extensive needs assessment surveys, these surveys often resulted in general lists of business needs gathered from a variety of professionals employed in different organizations (Guntermann, 1984a). This inventory of functions, knowledge and attitudes effectively served the purposes of an academic program designed to prepare students for a variety of possible occupational settings, but the LIPP approach may not provide the most appropriate information on training needs for a specific company. Academia's unfamiliarity with a particular corporate culture and specific job requirements together with its physical isolation from business settings set its approach to needs analysis at the opposite end of the continuum.

Learning Outcomes

Training program goals and objectives were determined in all of the exemplary cases by means of thorough and detailed needs analyses. Each identified need was matched with a set of specific learning outcomes. Obviously, those programs which had conducted extensive needs analyses were better able to identify clear learning outcomes. The ERFA group responded to a survey identifying program goals and objectives. ERFA described the general goal as the development of language performance and behavior competencies appropriate for a variety of professional and social situations. The LIPP at Arizona State formulated its goal as the development of communicative proficiency within social and professional functions and contexts. The Foreign Service Institute defined its general goal as "functional effectiveness as well as linguistic correctness (Crawford, 1983, p. 3)." ERFA identified specific objectives within the linguistic framework of understanding, speaking, reading and writing. They combined this linguistic framework with priorities emerging from specific task analyses geared to individual job requirements. Using the example of marketing personnel, ERFA placed top priority on speaking skills, specifically the ability to communicate orally with secretarial staff and top management; next they placed the ability to write to secretarial staff and the engineering staff; and finally, the ability to read and comprehend materials from top management. Combined with these very specific skills involving a narrow set of technical vocabulary, ERFA identified the outcome of the ability to negotiate while maintaining a positive and productive attitude (Beneke, 1981).

In most programs a distinction was made between general language objectives and technical language objectives, a distinction based on the results of task analyses and word frequency counts. Surprisingly, in all programs including those of ERFA companies, general language was considered more important than technical. Although technical language is important, it is considered easier to learn once general language is mastered. Inman (1978) found that technical language constituted only 21% of the language used on the job when analyzed linguistically. Other research done in this area indicates that the percentage of technical language varies from job to job. Technical language is more important for engineers than for managers. Some linguists voice an opposing view, however. Dany (1985) recommends using some technical language in the initial stages of language training to motivate the trainees. Coutts (1974) rejected the idea that specialized language could not be taught before general language was mastered. Her training model for airline personnel included technical language at the very beginning stages of training.

Communicative competence as a general goal includes in all cases appropriate cultural behaviors in addition to linguistic competencies. Biersteker's (1986) testing model for business needs evaluates cultural as well as linguistic behaviors. Cere (1986) provided a list of culture-related competencies that could serve as a separate cultural component of a training program. These competencies include:

1) Self-awareness, a professional's awareness of his/her own behavior and attitudes.

2) Cross-cultural understanding, a professional's understanding of the similarities and differences between cultures.

3) History/traditions, one's knowledge of the socio- economic, political and historical development of the country.

4) Counterpart orientation, knowledge of the host country's culture surrounding the given profession or job.

5) Coping strategies, a repertoire of coping skills to assure a positive experience by the trainee in the host country.

Interestingly the above description of non-linguistic training given by Cere (1986) is similar to the Peace Corps Core Curriculum for preparing volunteers to work in host countries. The elements listed above, of course, refer to training that goes beyond the language classroom.

Materials Selection

A common complaint among all program descriptions was a shortage of appropriate materials for business language programs. Most programs relied on a combination of commercial instructional materials and teacher-prepared materials. Business materials had to be up-to-date, hence, almost by definition, needed to be customized. Instructors in the Arizona State LIPP program wrote all their own materials. In-house trainers have the advantage of having ready access to technical content materials related directly to the needs of the trainee's job and to the needs of the company.

The selection of materials requires the same distinctions mentioned previously between general and technical language. In the case of the Costa Rican Bankers' Association, instructional materials addressing technical aspects of banking in Costa Rica were prepared by the instructors on the basis of interviews with each banker as well as observations of the bankers at work made by two trainers during a one-week period. Hence technical language was taught using teacher made materials, while general business language as introductions, telephone transactions, negotiating insurance coverage or the rental of an office, travel transactions and bank exchanges might be available in commercially produced LSP materials. The Costa Rican language training program intended to train bankers to deal with an influx of U. S. retirees and tourists, for example, used a paperback book written by Harvard Professors Stillman and Gordon (1983), English for Banking and Finance. This commercial text covered general banking topics such as savings accounts, checking accounts, loans, investments, electronic banking and automatic teller machines (Nolan, Grynspan and Klein, 1984). Selective use of commercial materials can save time without compromising the customized approach of in-house programs.

Finally, ERFA trainers argued for the use of learning modules to teach technical language. Modules can be modified without changing the design of the entire program. Modules can be built around annual reports, technical reports, office forms, business letters, magazines and newspapers. Dropping a module from the training design or rewriting modules to fit recent changes in procedures or technology allows the trainer to make changes without extensive program revision (Worth & Marshall, 1981).

Selection of Methods

Before addressing teaching methods, a profile of the trainer or training staff requires some discussion. Almost all the in- house programs reviewed used a combination of trained linguists and native speakers of the target language. Deveny (1986) used native speakers recruited from the university to provide international students the opportunity to learn technical language in computer science. Nolan, Grynspan and Klein (1984) brought six U. S. university graduate students to San Jose Costa Rica to use as trainers for banking professionals under the direction of a trained expert in TESOL. An in-house training program, as the case studies indicate, requires at least one individual trained in the areas of linguistics, program development and the business operations of the company. In the case of the Costa Rican Bankers Association (Nolan, Grynspan and Klein, 1984), knowledge of the business operations of the companies was provided by the Executive Secretary of the Costa Rican Bankers' Association and the President of the Banco de Costa Rica, both of whom reviewed and approved the training design and the instructional materials. Having the experts in language and program development different from the experts in the corporate culture of the banks was a disadvantage. Rippert-Davila (1985) puts it nicely when he observes that the language instructor must have expertise that spans three cultures--home country, host country and corporate. The ERFA group recommends a full-time linguist who is also trained in adult teaching methods and program development and administration (Freudenstein, 1981).

The setting of the training should be somewhat informal and comfortable. The ideal setting for a language training program would be a home-like room with comfortable chairs together with appropriate instructional aids such as overhead, video recorder, monitor, audio tape player, flip chart, white board, maps and dictionaries.

Few aspects of teaching methodology have been debated as much as the time of training. And, in no other learning task is there such a direct relationship between practice time and language proficiency. However, among cases studied programs varied in length from a 40 to 400 contact hours. Programs also varied from full time to part time. Some European programs, for example, met 90 minutes per week for 30 weeks. Others met full time for two weeks and still others, half-time for 20 weeks. The Foreign Service Institute typically trains their ambassadorial and consular staff for 16 weeks in a full-time, intensive setting, depending on the target language. Peace Corps devotes from 180 to 240 hours of intensive language training, typically in a twelve week format. However, Peace Corps really enjoys many more contact hours, since their training has been conducted in recent years in the host countries where trainees benefit from total immersion every waking hour of the day. Hence there were two types of programs---intensive and extensive.

Shallis (1979) reported that a third of the institutions she studied preferred a combination of intensive and extensive programs. Campbell, Hallman, and Geroy, (1988) surveyed international companies in Florida regarding their practices in this regard. Sixty-seven percent (67%) had no preference for program length. Gill (cited in Shallis, 1979) showed that an operational level in a foreign language takes 500 hours extensively (three years at four hours a week) 400 hours intensively (six to seven hours per day), and 250-300 hours by immersion (50 hours a week).

Based on the programs reviewed in this study, 250 hours of classroom instruction seem to make up the minimum time frame necessary to achieve the outcomes of the trainee's being able to communicate at a basic level in a variety of social and professional situations. A Foreign Service Institute rating of FSI 1 (elementary proficiency), which is equivalent to the Intermediate level on the ACTFL scale, on the average requires approximately 240 hours of instruction according to Guntermann (1984a). In Europe, at least 270 hours of instruction are considered necessary to reach "threshold level," the minimum level of language competence for survival in a foreign country (Dannerbeck, 1987, p. 418).

Evaluation Procedures

Evaluation of foreign language training programs was conducted on three levels. First, perhaps most immediate and tangible, is the evaluation of trainee learning and performance during and after training; second, the quality of the training itself, and finally, to justify one's training expenditures to the funding agency.

Evaluating trainee performance takes two basic forms, use of standardized pencil and paper tests and use of oral observations and interviews. The interviews are standardized insofar as they employ a standard set of questions and stated criteria for assessment. On the other hand, although standardized, interviews cannot be considered objective, since they require individual interpretation and judgement. Some European programs used objective testing including written tests and multiple choice tests covering vocabulary, grammar, cultural information, reading and listening comprehension (Freudenstein, 1981). They also use observations of role-play, evaluations of written composition and letter writing, as well as the interview. It was observed that Europe and Japan had more comprehensive evaluation approaches than did U.S. companies.

In the United States there is a growing trend to use standardized, proficiency-based evaluation methods of foreign language skills (Buck and Hiple, 1984). Proficiency guidelines and ratings have been developed by government agencies as well as by the American Council for the Teaching of Foreign Languages (ACTFL).

Besides the linguistic performance, trainee evaluation also included an assessment of culturally appropriate behaviors. Often, this type of evaluation was qualitative in nature, occasionally, quantitative when reduced to pencil and paper instruments. In assessing, both language and culturally appropriate behavior most programs have abandoned achievement testing in favor of proficiency testing.

Proficiency testing focuses on the "functional use of the totality of the language compared to that of an educated native speaker" (Buck & Hiple, 1984, p. 525). This is basically the approach of government institutions such as the Foreign Service Institute, the CIA, the Peace Corps, and the Defense Language Institute who use scales developed by the Interagency Language Roundtable which are commonly referred to as FSI scales. In this approach a face-to-face oral interview conducted by a native-speaker is used to determine the point of linguistic breakdown, the level at which the candidate can no longer maintain linguistically accurate and culturally appropriate performance" (p. 527). [we might show visual of FSI scale, which I have; however, my edition is 1981]

Another proficiency testing instrument is the Biersteker (1986) interview format which can be used to predict communicative competence in specific situations. This evaluation instrument consists of a cultural skills area and a language skills area. Trainees were evaluated in each area according to their production and understanding of the target language and their social interaction with native speakers.

However sophisticated the above approaches may be, such assessments are inferential when compared to on-the-job performance (Crawford, 1983). Unfortunately, language trainers rarely have the opportunity to observe subsequent on-the-job performance of trainees. It is recommended that in-house programs afford trainers the opportunity for follow- up observations of trainees on the job in the interests of better program evaluation.

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New Employee Adaptation and Socialization: A Working Model for HRD Interventions

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The lifeblood of any organization is its ability to attract and retain good people. While much emphasis is given to the selection of new employees and their development for future advancement, organizations often overlook the critical process of transforming the new employee from naive outsider to knowledgeable insider capable of making significant contributions. This process, called organizational socialization or organizational entry, takes place largely during the first year of employment and has a direct impact on critical outcomes of the employment process. It should be a particularly important concern for human resource development professionals because in almost every organization, it is they that have the major responsibility for transforming newcomers into productive members of the organization by developing and implementing new employee orientation and training programs. While not totally ignored by the HRD literature (Leibowitz, Schlossberg & Shore, 1991), organizational entry has not received enough attention by the HRD field. Unfortunately, good tools do not exist to guide HRD interventions.

Feldman (1989) has noted that there is a need for more integration between the HRD and the socialization literature. To date, the research on training new employees has focused mostly on skill development for task competence and largely ignored the socialization process of learning group norms and gaining acceptance in the organization. Similarly, the socialization literature has largely ignored the training process or captured it in one global construct of "task competence," focusing instead on the non-task aspects of the entry process. In fact, training is a central aspect of the socialization process, both because of the information conveyed to the newcomers and because of the role it can play in teaching the newcomers the norms, values and culture of the organization. Conversely, outstanding task performance can not be obtained without effective socialization since few employees perform their tasks independent of the organizational milieu of norms, values, relationships and culture. The two perspectives must be merged because becoming an outstanding performer is a process of acquiring both task-related competence from training and non-task related competence from socialization.

A close look at previous research shows that an in-depth and comprehensive working model of the essential developmental tasks required for successful new employee adaptation does not exist. If the training and socialization perspectives are to be merged, a comprehensive model is needed that enables HRD professionals to diagnose adaptation and socialization problems; design HRD interventions to facilitate the process and solve problems; evaluate intervention outcomes; and teach the process to newcomers.

The purpose of this paper is to present a model that meets these criteria. This model integrates the major theories and research in the field into a single comprehensive, working framework that can be used effectively by both researchers and practitioners. It has been developed after six years of field research (Holton, 1991b; Holton, 1991a) and training programs conducted at a variety of large organizations. The early results of research studies and training implementations of the model have been promising.

Background Research

The importance of the organizational entry process can not be underestimated as studies have shown it has a significant impact on a variety of important organizational outcomes. Turnover studies have reported unusually high turnover for new employees, usually around 50% (Leibowitz, Schlossberg & Shore, 1991; Wanous, 1980) and a high intent to leave (Holton, 1991a). Job satisfaction studies have shown lower satisfaction among new employees (Morrow & McElroy, 1987; Adler & Aranya, 1984) and higher satisfaction where the socialization process leads to greater person-job congruence (Stumpf & Hartman, 1984; Richards, 1984). Studies of organizational commitment have shown a link between organizational commitment and work experiences during organizational entry and the first year on the job (Meyer & Allen, 1988; Pierce & Dunham, 1987). It is not surprising then that at Texas Instruments a new orientation program cut turnover by 40%, while Corning Glass reduced turnover 68% with calculated net savings of $1.2 million annually from reduced turnover and faster learning among new employees (McGarrell, 1983).

Because organizational entry is so important, it has caught the attention of some researchers seeking to understand the process by which new employees are brought into an organization. A variety of approaches have been considered including models of the stages newcomers go through (Schein, 1978; Buchanan, 1974; Wanous, 1980); tactics and practices that organizations use (Van Maanen & Schein, 1979; Zahrly & Tosi, 1989; Louis, Posner & Powell, 1983); and realistic job previews (Premack & Wanous, 1985). Other theorists have approached the issue from an individual psychological perspective including process models (Louis, 1980; Louis, 1985); investigations of personal characteristics (Locke et al. 1984; Jones, 1986); and surveys of tactics individuals use (Feldman & Brett, 1983; Ashford, 1988). More recently, researchers have attempted to blend the two lines of research into interactionist models (Jones, 1983; Reichers, 1987; Ashford & Taylor, 1990). Unfortunately, the socialization research remains very fragmented and incomplete (Fisher, 1986; Feldman, 1989).

A Performance-Based Model

The merging of the training and socialization perspectives requires a performance-based approach to new employee adaptation/socialization. This model provides a descriptive and prescriptive tool, the goal of which is to move newcomers to outstanding performance, not just to provide an understanding of the entry process. It is an action-oriented tool used to plan and intervene in the process in order to obtain desirable new employee development outcomes such as performance and retention. This model views outstanding performance as a much broader construct than just task-related skills which results if, and only if, the adaptation/socialization process is successful.

The entry process is viewed in this model as consisting of four groups of tasks: *Individual, People, Organization* and *Performance* tasks (see Figure 1). Fisher (1986) suggests a similar macro structure for understanding the content of socialization. Each group is further divided into three tasks, leading to a total of twelve adaptation tasks, detailed in Tables 1 - 4 that follow. Overlaid on these twelve tasks are three stages, discussed later in this paper. This model is unique in that it captures two dimensions of the adaptation process: the progression through stages and the progression through developmental tasks required for successful adaptation, thereby blending disparate theories into one unified structure. Central to this model is the premise that there must be a building toward performance. Each task and stage is a building block, moving the new employee closer to successful adaptation and outstanding performance.

Looking at the graphic representation in Figure 1, the newcomer is conceived as entering the organization at the center of the circle and then moving outward along the axis toward the outer edge of the circle, representing the three stages of adaptation (see below). At the same time, the newcomer progresses in a clockwise direction from the *Individual* quadrant to the *People* quadrant to the *Organization* quadrant and finally to the *Performance* quadrant (ideally). Full adaptation is then achieved when the newcomer has successfully negotiated all three stages and twelve tasks.

Individual Quadrant

A successful adaptation process begins with three *Individual* tasks shown in Table 1.

Table 1 Individual tasks	
1.1 Attitude	an individuals's attitudinal predispositions toward their professional career, job and organization and the degree to which it matches the attitudes desired by the organization.
1.2 Expectations	an individual's expectations about all aspects of the job, the organization and themselves in the job. Together with the organization's expectations, these expectations result in a psychological contract between the individual and the organization.
1.3 Breaking-in	an individual's awareness of the dynamics and importance of the adaptation-to-work process and their mastery of the special skills and strategies required during organizational entry.

First, newcomers' attitudes must be appropriate for both the job and organization they are entering. All new employees, regardless of experience level, bring with them attitudes that have been shaped by previous cultures and experiences that are likely to need adjustment. Previous research has paid only limited attention to the impact of newcomer's attitudinal dispositions prior to joining an organization (Fisher, 1986). Some socialization stage models include an anticipatory socialization stage to capture the impact of learning and experiences that happen prior to joining an organization, focusing primarily on how prior cultures and socialization experiences affect attitudes (Jones, 1983; Nicholson, 1984; Feldman, 1989). Feldman (1976a) found a significant correlation between congruence of attitudes and values and initiation to the group. In a similar vein, Tannenbaum, et.al. (1991) found that pretraining attitudes acted as antecedents to training effectiveness in a socialization training situation. Several other studies support the notion that pretraining attitudes, expectations and motivation affect training outcomes (Baldwin, Magjuka & Loher, 1991; Noe & Schmitt, 1986).

If an individual's attitudes are appropriate, they will be better prepared to learn appropriate expectations about their new career, jobs and organizations. One of the most common causes of adaptation problems is a mismatch between an individual's expectations and the reality found in the organization (Richards, 1984; Holton, 1991a; Nicholson & Arnold, 1991). Research has consistently showed a strong correlation between met expectations and job attitudes (Premack & Wanous, 1985; Wanous & Colella, 1989). There is also evidence that met expectations have a significant impact on other socialization activities such as role definition, awareness of the interpersonal dimension and newcomers' discovering what the organization expects of them (Feldman, 1976a). Thus, developing appropriate expectations is one of the foundation tasks for successful new employee development.

With appropriate expectations comes the awareness of the importance of the breaking-in period and the special skills needed to successfully enter a company and become accepted and respected as a member of the team (Baum, 1990). Socialization

researchers have largely ignored this component of the process, implicitly assuming that people know how to and want to adapt to their new organizations. The socialization period is a forgotten career stage with special dynamics and strategies that newcomers need to learn. Ashford & Taylor (1990) point out that the first step in the learning process is for a person to recognize that adaptation is required Many don't begin the process because they don't recognize the need to do so due to internal schema and scripts they bring with them. Fisher (1986) also cites adaptation awareness as critical along with knowing what to learn and whom to learn it from. This task then is the process of acquiring the awareness and special skills necessary to succeed in the socialization process. Other important aspects include organizational learning skills, understanding the breaking-in process and knowledge of adaptation strategies.

People Quadrant

Organizational entry is fundamentally a social learning process (Katz, 1985), a fact grossly under-estimated by most new employees. Thus, the second quadrant of this model are the *People* tasks:

Table 2 - People tasks	
2.1 Impression Management	an individual's awareness of the role impressions play in establishing the organization's initial evaluation; an understanding of the impression management process; the ability to learn what impressions will be viewed most favorably in the organization; and mastery of the skills and strategies necessary to manage the impressions created.
2.2 Relationships	an individual's understanding of the role relationships play in organizational success and the kinds of relationships that should be built; the skills necessary to build and maintain effective professional relationships and networks; and effective teamwork strategies.
2.3 Followership	an individual's awareness of the importance of the boss/subordinate relationship and their respective roles; the skills needed to be a savvy subordinate and to manage the boss/subordinate relationship for mutual gain; and effective strategies for building a strong working relationship with a boss.

Together, the first three tasks lay the foundation for the individual to make a strong impression upon entering the organization, which is the first task in the *People* quadrant. Unfortunately, socialization researchers have not focused on the impact of impression management on outcomes. Yet, it is the initial impressions a person make that are instrumental in beginning what Schein (1968) calls the "success spiral." Newcomers must take active steps to manage the perceptions others form of them through things such as their dress, behavior, conversations and activities (Wanous & Rosenfield, 1989). Because a newcomer has no track record of performance, they are under a magnifying glass in the beginning, with the impressions created acting as a gatekeeper, opening or closing access to socialization opportunities. If newcomers make positive impressions quickly, they will be identified as "high-potential," enticing other employees to want to develop relationships with them in the short run and opening up opportunities for success in the long run.

These relationships with co-workers, subordinates and bosses play many critical roles in successful adaptation and socialization including filling the gaps between formal training and the real world (Feldman, 1977); helping to interpret and filter events (Feldman, 1980); meeting social, self-esteem and mentoring needs (Kram & Isabella, 1985; Kram,

1988); providing social support (Fisher, 1985); speeding acceptance by the group (Baum, 1990); and learning the culture (Louis, 1990). Interpersonal relationships have been found to be the second most helpful strategy to newcomers (Louis, Posner & Powell, 1983) and to be related to job satisfaction and commitment (Adkins, 1993). Other important outcomes of building good relationships may include more successful organizational learning strategies and learning how to get things done, since most organizational tasks require some element of teamwork.

One of the most important of these relationships is with the newcomer's boss, the third task in this quadrant. This requires acquiring strong followership skills. Once again, this aspect of socialization has received only limited attention. Weiss' (1977) study is the best known, finding that subordinates tend to adopt the work values of their immediate superiors and that supervisors are important role models for subordinates. Supervisors also exert important socialization influences through job challenge, which is correlated with performance and job attitudes (Berlew & Hall, 1966; Bray, Campbell & Grant, 1974); their evaluation of newcomers and making learning opportunities available to them as a result of the evaluations (Feldman, 1976a); transfer of learning from formal training (Feldman, 1989); and role-making and learning the informal organization through interpersonal exchange with supervisors (Graen, 1976). Because this relationship is so important, so different than other relationships, it may require different interventions (including management training), and is included as a separate task.

Organization Quadrant

It is only through the establishment of strong, effective relationships with people in the organization that a newcomer can learn the complexities of the organization itself (Feldman, 1989), represented by the *Organization* quadrant. This quadrant makes it more apparent why becoming successful in the adaptation process is a social learning process since it is through interaction between the individual and the environment that much of the information about the organization is obtained, acceptance is gained and roles are learned (Ashford & Taylor, 1990; Louis, 1990).

Table 3 - Organization tasks	
3.1 Organizational Culture	an individual's understanding of the elements of organizational culture and how it affects performance; their awareness of the importance of fitting-in to the organizations culture; and the skills needed to learn the key elements of the culture that are not explicitly taught
3.2 Organizational Savvy	an individual's awareness of the informal organization and success factors in the organization; an understanding of appropriate means for getting results through the informal organization; and the skills to learn the informal organization and effectively use it to achieve desired results.
3.3 Organizational Roles	an individual's ability to locate themselves in the larger perspective of the organization's mission; to understand their role and identity in the organization; to learn what appropriate expectations and activities are for their role; and the ability to accept the limits and realities of that role and reconcile role conflicts and ambiguity.

Much of the critical information about an organization is not written down and is often not even formalized. Perhaps most critical is learning the organizational culture itself, the first task in this quadrant. Organizations want employees who "fit" their culture (Schein, 1985) and are quick to look for confirmation that a new employee will "fit in". A quick understanding of the norms, values and work styles of the organization speeds adaptation and access to good assignments. Without a complete understanding of the organization's culture, a newcomer can not understand the informal systems, the roles people play, the "taboos" of the organization, why tasks are performed the way they are or many of the other daily experiences of organizational life. Culture understanding then is the foundation for the rest of building towards successful performance.

While there has been much discussion about organizational culture in recent years, empirical research has been more limited. There is evidence that an organization's culture affects new employee retention rates (Sheridan, 1992), although the exact relationship is far from clear, and productivity (Kopelman, Brief & Guzzo, 1990). Louis (1990) stresses that in order to become competent in a social group, one must learn to share the "meaning set" shared by that group. With this cultural knowledge, a person is better equipped to interpret events, anticipate events and manage the uncertainties found in everyday life within the group. But, it is very difficult to teach since culture is largely informal, contextual, and unofficial and is both created and transmitted through interpersonal interaction (Schall, 1983).

Once a newcomer understands the culture well, they can then acquire the organizational savvy needed to understand the many informal systems and methods that comprise the way things "really get done around here." Becoming effective means developing the savvy to know how to work through an organization and its people to get results, learning the informal procedures, understanding the politics of the organization and learning to negotiate the informal power structures and systems. "Learning the ropes" is the process of using one's knowledge about culture to make sense of what happens in everyday organizational life (Louis, 1980) and to map the relevant players in the power structure (Louis, 1982). Kramer (1974) cites the importance of nurses learning "backstage" reality during their socialization in order to learn how things really get done. Unfortunately little other attention has been paid to this construct.

With this culture understanding and savvy will come a more complete understanding of the newcomer's role in the organization. A significant challenge for many newcomers is finding a role for themselves, understanding the organization's role expectations for newcomers, dealing with role conflict and becoming comfortable in their new role, especially since the newcomer's role is often less glamorous than expected (Feldman, 1989).

The impact of role management on socialization has been a frequent topic of research, second only to realistic job previews. These studies have found that newcomers are more satisfied with their jobs when the role is well defined (Feldman, 1976b); performance, job satisfaction and commitment are predicted by role ambiguity and role conflict (Adkins, 1993); that role conflict contributed most to the variance in frustration scores among new engineers (Keenan & Newton, 1984); that role clarity is an important element of socialization (Fisher, 1982); and that new employees devote increasingly more time to role adjustment than to learning tasks during the initial period of employment (Graen, Orris & Johnson, 1973). Graen (1976) defines role-making as having four components: acquiring knowledge about constraints and demands, receiving and sending persuasive communications about behavior in this role, accepting a particular pattern of behavior, and modifying this behavior over time. It seems clear that role-making is a critical and complex process requiring extensive interpersonal interaction and a high degree of knowledge about the organization, hence its position late in this model..

Performance Quadrant

Only when the previous three groups of tasks have been successfully completed is the newcomer really ready to become an outstanding performer and fully master the tasks of the *Performance* quadrant. Performance is far more than basic task-related competence and is an outcome of successful adaptation, not the starting point.

Table 4 - Performance tasks	
4.1 Work Savvy	an individual's understanding of how to apply the realities of organizational life in their specific job; how to apply previously learned skills to the job; and the acquisition of foundation skills (e.g. communication, time management, etc.) necessary to function in the job.
4.2 Tasks	an individual's understanding of the basic tasks they are required to perform in the job; proving their competence; and performing the tasks successfully
4.3 Knowledge, Skills and Abilities	an individual's ability to identify the knowledge, skills and abilities they need to perform the tasks successfully, now and in the future; and the formal and informal learning skills necessary to acquire that knowledge, skills and abilities.

With strong relationships and a strong understanding of the organization, the newcomer can develop a keen sense of how to properly approach the job, called work savvy. This task is largely overlooked in other socialization research, with the exception of Fisher (1982) who notes the importance of developing a system for getting the work done. Experienced employees quickly forget how important it is to develop a schema or system for prioritizing, processing and accomplishing the job. While some may lump this under the more global construct of "learning the ropes," this model views it as a separate task because it deals with the newcomer-work interaction rather than the newcomer-organization interaction. It is particularly significant for early careerists or career changers who do not have an internal schema of how to get the work done.

With the appropriate work savvy, a newcomer will be able to clearly understand the tasks they are required to perform. Not surprisingly, task competence has been found to be related to performance ratings, job satisfaction and commitment (Adkins, 1993; Stumpf & Hartman, 1984). However, it is worth noting again that outstanding task performance is impossible without success at the previous nine adaptation tasks of this model. Task competence, often conceived as a beginning point of adaptation, is impossible beyond a basic level without successful socialization.

Finally, having come to a complete understanding of the tasks in the job and the newcomer's role, a new employee can see the entirety of the knowledge, skills and abilities required to perform them. New employees may be prone to be overconfident about their knowledge prior to successful socialization. For many, one outcome of socialization is "knowing what they don't know;" many reporting a sort of humbling experience when they realize they aren't as prepared as they thought they were (Holton, 1991b).

Adaptation Stages

Newcomers proceed through each of these developmental tasks in stages. While there have been many forms of stage models postulated, support for them has been mixed (Fisher, 1986). One reason may be the over-dependence on discrete, liner models of three or four stages. It is more likely that adaptation is a cyclical process that includes iterations between tasks rather than discrete stages (Ashford & Taylor, 1990). Field experience suggests that stages do exist, but not in the simple form frequently postulated. This model conceives of the process as having three stages: *initiation, transition* and *adaptation* operating in a cyclical, iterative fashion through the twelve tasks. The key tasks and issues of each stage, which follow closely Louis' (1980) conception of the psychological process newcomers undergo, are described in the table below:

STAGE	KEY ISSUES
Initiation	SURPRISE Reality Shock Discovery Letting Go Coping
Transition	SENSEMAKING Norms Fitting-In Breaking-In Negotiation
Adaptation	CHANGE Settling In Accommodation Acceptance Commitment

The *initiation* stage is characterized by encountering the reality of each task and aspect of the organization, usually with some degree of surprise and contrast with expectations; coping with stress; and beginning the underemphasized process of unlearning or letting go of old learning to restructure internal schema. The second stage, *transition*, is characterized by a process of making sense of the surprise experienced in the first stage, sorting out the norms, trying to fit those norms and negotiating with oneself and with the organization about the degree of conformance and change required. The third stage, *adaptation*, marks the acquiescence to the adaptation required of the organization, and understanding of the accommodations needed and a commitment to making those changes.

Progression Through the Process

It would be naive to think that an individual can proceed through the stages or the tasks in the discrete manner described so far. A more accurate representation would be a priority fan where a newcomer cycles through each of the tasks and stages several times like a fan unfolding as priorities and energy are shifted. When a newcomer first enters the organization, he or she is most likely initiated at least partially to all 12 of the tasks at once. The newcomer must be functional in all twelve to survive, at least at a minimal level. At issue is where the newcomer should place priority for advancing beyond the initiation stage to complete adjustment on each task.

After the initiation stage, the newcomer would begin the building process by first focusing on his or her attitudes to make sense of the attitudes that are rewarded in the organization. Then they can begin to work on expectations, and so on. In reality what happens is that as a person moves through the transition stage and approaches the adjustment stage in one task they begin to shift some energy to the next task and start to move into the transition stage on that task. Continuing our example then, as the newcomer begins to get comfortable with the new attitudes expected and starts to make the changes, they begin to realize where their expectations are out of line and start into the transition stage on the expectations task. As they approach the end of the transition stage of expectations, the breaking-in task becomes more evident and some energy shifts there. The process continues in this pattern around the wheel until adaptation is complete.

Applying The Model

This model makes it easier to analyze why adaptation processes often don't work since it clearly shows how easy it is for the process to go awry. Typical adaptation problems include: focusing exclusively on task performance issues; skipping tasks; skipping entire quadrants (e.g. ignoring the people issues); becoming frozen in one stage, typically the transition stage; trying to move too quickly through the wheel; and not maintaining consistent progress through the tasks.

The first problem is the most serious and deserves emphasis. There is an enormous discrepancy between where most new employees and the institutions and organizations that prepare them place their emphasis and the factors important for successful adaptation in an organization. New employees typically place most of their emphasis on proving their task-related competence (quadrant 4). Organizations are little better, placing most of their emphasis on developing the task related skills in training programs while much less effort, at least formally, is made to address the non-task related elements (quadrants 1 - 3). Unfortunately, outstanding performance on the basic tasks of the job will usually only earn an employee an average performance rating. It is the non-task related competencies that differentiate an outstanding new employee from an average one. Thus, the overwhelming emphasis in most new employee development processes is on the wrong thing, the task, because neither the manager nor the new employee are trained in the special process and skills needed to navigate the adaptation process successfully. A balanced program which includes training for all twelve adaptation tasks is the correct approach.

While testing on this model is far from complete, the author has used this model successfully in numerous applications. These applications include using it as a tool to plan and conduct training programs for new employees and managers; to assess new employee progress (conceptually); assessment and design of organizational new employee development processes; program design and development; a format for manger/new employee discussion in problem situations;and individual counseling. The model is also believed to be useful in changing organizational cultures where new employee development is less successful than desired. This could be particularly important in cases where enhanced new employee diversity is a goal (minorities, persons with disabilities, etc.) and the organization's socialization process might be a barrier. It is believed to have applicability across a broad spectrum, from high school to older workers.

Organizations preparing new employees entering the work place (e.g. colleges and universities, job programs) should focus on several key areas. First, they can deal with the entirety of the *individual* quadrant by preparing new employees with the right kind of professional attitude and expectations as well as teaching them the necessary breaking-in skills. Second, they can address the *initiation stage* for the other three quadrants to help new employees avoid difficult surprises when they enter the organization. Third, they can create an awareness of the other stages of the *people, organization* and *performance* quadrants so the new employee is aware of the learning required. Finally, they can teach organizational learning skills so the new employee has the ability to progress beyond the initiation stage in quadrants two, three and four once on the job.

For organizations hiring new employees, it is more complex. They must be prepared to address all quadrants and all stages since many preparatory organizations are not yet addressing them. They should use the model to assess the scope of their current programs and spot weaknesses. Most will find that they need to re-conceptualize the process from programs and events to a year-long socialization/training process that requires on-going, integrated attention and effort. It must be remembered that limited scope new employee development programs are likely to cost an organization a significant amount of money. This model suggests a new and expanded role for HRD that extends well beyond traditional orientation programs and new employee training with a real, bottom-line impact.

Finally, this tool can be used by managers, executives and human resource development professionals to better understand what new employees experience as they enter work organizations. Managers and executives will be able to use the model to manage new employees more effectively and to increase profitability by reducing turnover and increasing productivity. It can also be used to teach new employees the most effective adaptation strategies, to help them understand the often frustrating process of entering an organization, and to diagnose adaptation problems they may be encountering.

Conclusion

Although field tests and applications of this approach in workshops and counseling programs with new employees and managers have shown excellent results, it is still a conceptual model subject to further refinement and testing. The data and literature is quite strong in suggesting the validity of the model but much more work is needed to confirm it. Because HRD professionals usually have primary responsibility for developing new employees, this model is a vital tool since it provides a comprehensive perspective of the new employee experience. HRD researchers will benefit because the model provides a comprehensive framework by which existing research can be analyzed and further research planned. A close examination of this model suggests that this is forgotten career stage with enormous implications and costs for many different populations. The HRD field must pay closer attention to this critical issue.

ADAPTATION TO WORK WHEEL

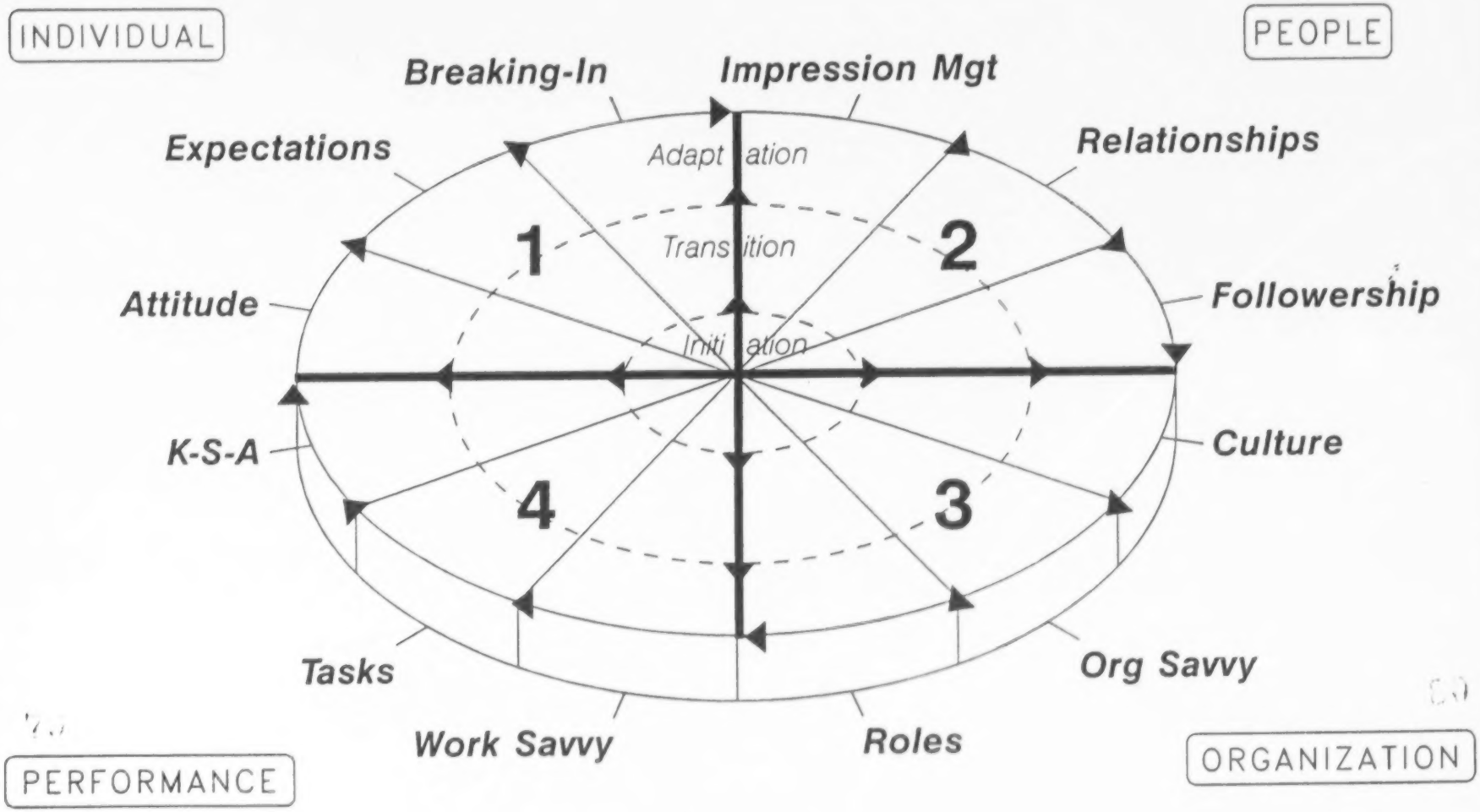

Figure 1

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City of Carrollton Training and Development Program: A Quest for Quality

LISA KEALER, Human Resources Trainer, City of Carrollton

The City of Carrollton, Texas, is located in the Dallas/Fort Worth metroplex. It is the ninth largest city in the Dallas/Fort Worth area. From 1980 to 1990, Carrollton's population doubled to more than 80,000. At the time, the City's progressive growth was a reflection of the limitless opportunities the community had to offer. However, as the economy slowed, the organization faced a dilemma. While the population increased and the need for services increased, the tax base had begun to decline. Due to the increased service base, the City was placed in a position of having to do more with less. We found ourselves, as many cities did at the time, with fewer dollars and more work to be done.

City Management realized that in order for the City to be both efficient and effective, employees and supervisors had to have increased skills. The philosophy was that if we expected more from the employees then we had to provide the training necessary to produce the expected outcomes.

We found that prior to that time, although the departments were spending money to send employees to various training programs, there was absolutely no consistency in the material which was being covered. Other outside training rarely included the Carrollton perspective and did not build a team approach. The average supervisor at the City of Carrollton did not have the effective supervisory skills needed to deal with the increased workforce or the increased workload.

In 1984, personnel policies were nonexistent. A Human Resources department had not been established at the City and the lack of organization-wide procedures and policies was a source of great confusion. Each department had rules but there was no consistency in application. As a result, employee morale was low because issues were being addressed one way in one department and in a completely different way in another department. Consequently, employees were appealing disciplinary decisions, the City was having to answer E.E.O.C. charges and our organization liability and risk factors were extremely great.

We realized that a long-term training program that specifically addressed the City of Carrollton issues and that emphasized our specific philosophy about different aspects of the organization was needed. We knew that being exposed to federal laws and supervisory practices in a general sense was one thing, however effective implementation of the material in the workplace was an entirely different thing. A one-time training session would not produce the results that are part of this vision for the City of Carrollton. As a result of these combined factors, a Human Resources Trainer was hired to address the various city-wide training issues and to be available to address specific Carrollton issues as they arose.

The Trainer's main objectives would include: responsibility for assessing organizational and departmental training needs; and developing, coordinating and implementing employee, supervisory and management training programs designed to meet the identified needs of the organization. The position also established an evaluation tool to measure organizational training effectiveness. The position was approved by the City Council in 1988 and a Human Resources Trainer was hired in December, 1988.

The City of Carrollton training program is a comprehensive program which promotes excellence through education. It is an innovative program that addresses communication, employee development, productivity, quality and supervisory and legal issues.

The mission of the training program is to strengthen the skills and knowledge of Carrollton employees and supervisors. Every employee is involved in some aspect of the training program. The involvement may be as a participating in the New Employee Orientation, being supervised by someone learning new skills in the Supervisor Training Series or presenting a particular area of expertise.

It is a four-tiered approach. The first tier is the Supervisor Training Series (S.T.S.). The purpose of the S.T.S. is to provide a common, agreed upon foundation for all supervisors in the City of Carrollton.

The second tier of the Carrollton training program is the Administrative Network (A.N.). We recognize that the administrative staff, the employees who provide clerical support, are an integral part of our organization. As we move toward a "leaner" organization, the office support professionals will have a greater opportunity to take on more responsibilities and we want them to be prepared for the challenge.

The training program's third tier is the New Employee Orientation. We believe that bringing talented, quality people into the organization does not end with the hiring process. Orientation is where the relationship is enhanced.

The fourth tier of the training program consists of various on-going training sessions that are provided to the employees. These sessions include: Positive Discipline, Defusing Hostility, Creating Satisfied Citizens and Customers, Policy Briefings, Coaches Training and Grievance Review Panel Training. These programs range from four hours to sixteen hours and are offered to employees on a regular basis.

The Training and Development program has been successful in a number of ways and for the remainder of the session I'll outline the State of the Training Report, and an annual report, which details the various training programs offered. I'll also discuss several of the obstacles/concerns which we encountered at the City of Carrollton as a result of implementing a city-wide training and development program.

City of Carrollton State Of Training Report 1991/92

There comes a time in the life of an organization when thinking about the future must be combined with reflecting on the past. Indeed, most successful municipal organizations apply this sort of dual perspective, to one degree or another constantly.

As the City of Carrollton Training and Development function completes its third year of successful operation, we celebrate the past and we face the future with well-founded optimism.

We intend to maintain our position as a nationally recognized provider of training and development programs. We will continue to be innovative - to produce and deliver, with the support of employees and management, the most effective training and development programs possible.

The challenge we enthusiastically accept for the future is the same as the one we have striven to meet since we began: to be a municipal leader in providing effective on-going in-house training sessions for all City of Carrollton employees.

City Of Carrollton Training And Development Mission Statement

The mission of the training program is to strengthen the skills and knowledge of Carrollton employees and supervisors.

Broadening Our Programs

The training program in our organization is permeated with an orientation toward the future. In keeping with our efforts to provide the best services possible, the training and development area took several steps this fiscal year to enhance the effectiveness of the programs offered as well as add several additional programs. For example, the Professional Development Series, the Employee Involvement Program, and Front Line Supervision are all new training sessions developed specifically with targeted groups of employees in mind.

Assessing Our Training Needs

Early in the year, we conducted the first organization-wide Training Needs Assessment. Every Department Director in the City of Carrollton was questioned as to what suggestions they had about the Training and Development program. The comments provided reinforced our initial assumption: the in-house training is meeting the majority of our training needs. The Directors suggested a potpourri of topics to be considered for future implementation. The general comments were overall exceptionally favorable.

Thriving in the Midst of Adversity

Despite the fact that budget constraints were prohibitive of hiring external consultants, the number of employees attending training programs increased in the 1991/92 fiscal year. This year, due to the newly formed on-going series, the number of employees attending sessions is expected to increase as well as the variety of training programs offered.

Confronting New Challenges

We recognize that the role of today's worker is changing. One way in which our organization is attempting to address these changes is by ensuring that all employees have an opportunity to participate in our training program in one way or another. Our program, which is designed to cultivate and maintain winning contributing employees, addresses three distinct types of employee development: visionary, general and specific.

Visionary

Visionary development is the basic foundation upon which happy and motivated employees evolve. This foundation is often called the basic beliefs, the philosophies, of the organization. We attempt to equip our employees with our organizational vision shortly after they are hired during the New Employee Orientation Program, and to continue to reinforce our values during all programs attended during their employment.

General

General development needs can be categorized as general knowledge and general skill development. General knowledge development addresses:

How does my job fits into the "big picture"
Who are my customers?
Our organizational strengths, opportunities and challenges

General skill development is the learning of skills that are needed to best contribute to an organizations success. These general skills may include:

Problem Solving
Quality Enhancement
Effective Communication
Supervisory Skills
Goal Setting

General development topics are offered in a number of our training and development programs. We believe that employees want to be informed concerning organizational happenings and our training efforts attempt to address this need.

Specific

Specific developmental needs are established for targeted individuals or departments. For instance, the Parks department requested a Positive Discipline Briefing for their Crew Leaders. The session was specifically tailored for the front line supervisor with a specific emphasis on coaching and counseling. Similar sessions are developed throughout the year on an "as-requested" basis.

In these ways mentioned and others the Training and Development program has expanded in the past year. In recognizing we have a diverse workforce with multiple needs, new programs will continue to be developed and an educational environment will continue to be fostered at the City of Carrollton.

On the next few pages, you will find the 1991/92 State of Training Report. I will be happy to answer any questions or address any concerns upon completion of your review.

Major Accomplishments

The accomplishments in the area of Training and Employee Development during the FY 91/92 include:

Developed and implemented 12 Administrative Network sessions

Conducted 2 Creating Satisfied Citizens and Customers training sessions.

Delivered 1 Defusing Hostility training session.

Developed and conducted one Library In-Service/ADA

Implemented 11 New Employee Orientation sessions.

Developed and/or coordinated 58 Supervisory Training Series sessions.

Conducted 3 sessions of Positive Discipline for Supervisors.

Conducted 1 Positive Discipline Refresher for Fire Department.

Coordinated 1 Agenda Submission Procedures session for interested employees.

Coordinated 1 Child Labor Laws Briefing.

Facilitated 1 Role of the Supervisor training session.

Coordinated 1 Precision in Written Communication Training session.

Developed and implemented 1 Professional Development Series session.

Coordinated one Department Director/Division Manager Briefing.

Edited and distributed the supervisor newsletter, The Idea Generator, to provide relevant information to all supervisors in the City.

Developed and distributed supervisor handouts for each training session conducted to be included in the Supervisor Training Series Manual.

Consulted with supervisors concerning Positive Discipline questions and concerns.

Produced and distributed Quarterly Training Calendar.

Coordinated Policy Briefings for all city employees.

Coordinated publication of The Employee Edition, the monthly employeenewsletter.

Created proposal to implement Employee Involvement Teams.

From October 1, 1991 through September 30, 1992, I conducted 107 training sessions, involving 463 presentation hours (# of sessions x length of sessions). Three hundred and ninety-one employees attended some type of training session offered by the Human Resources Department this past fiscal year.

The State of Training Report is presented in four main sections. The first section, Training Programs Offered, outlines programs that are currently being offered to employees. Part two, Future Programs, discusses programs that have been approved by the City Manager to be offered in the near future. Part three, Proposed Programs, lists training sessions that will be offered to employees upon approval of City Management. The fourth section concerns Non-Training Accomplishments.

Current Training Programs

We have unlimited potential to make ourselves whatever we choose. Our only real limitations are those we place on ourselves.

This section contains information concerning training programs that are currently being implemented on a regular basis.

Current: New Employee Orientation

We recognize the critical role played by an effective orientation process. The role of our New Employee Orientation is to summarize the relationship between the employer and the employee; present work rules, standard procedures and administrative directives.

Our New Employee Orientation Program conveys what the employer does in turn for the employee - benefits, progressive disciplinary policy, services, etc. Our orientation process has the following objectives:

* to foster pride in belonging to an organization that values its employees and stresses the theme of quality through its employment operations,

* to create a complete (big picture) awareness of the scope and the nature of the City of Carrollton, our values and our modes of operation,

* to decrease the concerns commonly associated with new employment,

* to establish ownership of joint responsibility between the organization and our employees for individual growth and development of each employee.

The role of the Orientation goes farther than just stating mutual expectations. It also serves as an important demonstration of the City's attitude toward employees. It presents our organizational philosophy and it attempts to help set the tone for future employee relations.

Each month the City Managers and the Department Directors attend the Orientation to introduce themselves to the new employees. Afterwards, the employees are given the opportunity to ask questions of the Directors concerning our organization. Often, this after-lunch interaction is ranked at the top of the N.E.O. Evaluations.

The program will continue to be offered on a monthly basis. A "revised" Orientation will be implemented in the 92/93 fiscal year.

Current: Positive Discipline

Managing employee performance is the most important part of a supervisor's job. It requires the manager to both build superior performance and deal with situations that require coaching or formal discipline; some of the toughest responsibilities facing the manager.

Effective techniques require that two goals are accomplished:

1) achieve desired results
2) build and maintain the relationship

Positive Discipline is a performance management-system and a managerial method that requires employees to be treated like adults. It emphasizes building superior performance, thereby minimizing the development of serious problems. It enables managers to conduct business-like coaching and disciplinary discussions which lead to the employees taking responsibility for their own behavior.

Positive Discipline makes the employee their own most effective manager. It gives managers the skill and self-confidence to build superior performance to assist in resolving issues quickly, maturely and permanently.

During the 1991/92 fiscal year, I conducted three 2-day Positive Discipline sessions for supervisors.

We think Positive Discipline's greatest benefit is its focus on recognizing and rewarding good performance. We believe that through the training that managers have received, they can spend more time "catching people doing things right", and less time dealing with problems.

Additionally, improved individual performance throughout the organization will make us more productive and will help insure our continued success as an organization.

We're consistently striving to make our organization a better place to work. We believe Positive Discipline is a solid on-going example of our commitment to that goal.

Current: Positive Discipline Special Problems

One of the common concerns expressed by supervisors is the fact that a refresher course is needed to address specific disciplinary issues. As a result of those requests, the Positive Discipline Special Problems session was developed.

This four hour session was designed to present the supervisors with additional information on three specific on-going areas of concern:

Attendance/Punctuality
Insubordination
Drugs and Alcohol

In the past year, one Positive Discipline Special Problems Session was presented to Parks Crew Leaders. The program evaluations were favorable and I feel certain the supervisors received information that made them feel more comfortable implementing the basic concepts of Positive Discipline in their work areas.

This program will continue to be offered on an "as-needed" basis to all interested supervisors.

Current: Supervisor Training Series

"Empowerment." It's no longer a buzzword. It's a necessity. To tackle ongoing challenges, organizations must empower their employees. To be truly empowered, people need the skills to interact effectively, to communicate clearly, and to understand what is expected of them.

The City of Carrollton Supervisor Training Series consists of introductory and skill-building modules. Each session is "Carrollton specific" in the organizational examples and scenarios which are presented. Participants are encouraged to interact with each other to address common problems and opportunities they face, learn from each other, and gradually tailor the sessions to their collective goals and personal needs.

The Supervisor Training Series I begins with a two day Role of the Supervisor training program. The two-day ROLE OF THE SUPERVISOR session is followed by 23, half-day, supervisor training sessions. The topics covered include:

TAB 2 DRUGS IN THE WORKPLACE
TAB 3 TITLE VII
TAB 4 AIDS IN THE WORKPLACE
TAB 5 DRUG TESTING - CARROLLTON
TAB 6 DEFUSING HOSTILITY
TAB 7 ORIENTATION - YOUR RESPONSIBILITY
TAB 8 FAIR LABOR STANDARDS ACT
TAB 9 YOUR ROLE IN BUDGET MGT.
TAB 10 WORKERS COMPENSATION
TAB 11 HARASSMENT PREVENTION
TAB 12 TEAM IDENTITY
TAB 13 EMPLOYEE ASSOCIATIONS
TAB 14 POSITIVE CONTACTS
TAB 15 SELECTIVE INTERVIEWING
TAB 16 INVESTIGATIONS AND APPEALS
TAB 17 MOCK HEARING
TAB 18 UNEMPLOYMENT HEARINGS
TAB 19 EMPLOYEE ASSISTANCE PROGRAM
TAB 20 PERSONNEL FILE - LEGAL ASPECTS
TAB 21 COACHING FOR WORK PERFORMANCE
TAB 22 DUE PROCESS/JUST CAUSE
TAB 23 PERFORMANCE EVALUATIONS
TAB 24 QUIZ - REVIEW

Each supervisor in the City, (with the exception of Police employees) beginning with the City Manager, has been placed on a TEAM. We feel that this TEAM approach has been effective because it promotes interaction between supervisors from different departments and is conducive to varying perspectives on subjects to be introduced.

After completing Series 1, supervisors begin S.T.S. II sessions. The S.T.S. II topics include:

TABS 1,2,3,4	CREATING SATISFIED CITIZENS AND CUSTOMERS
TAB 5 & 6	INTERVIEWING SKILLS
TAB 7	LISTENING SKILLS
TAB 8	MANAGING A DIVERSE WORKFORCE
TAB 9	PERFORMANCE APPRAISALS
TAB 10	WORKERS COMPENSATION
TAB 11	STRESS MANAGEMENT
TAB 12	QUALITY THROUGH PARTICIPATION
TAB 13	DIMENSIONS OF DIVERSITY
TAB 14	7 HABITS OF HIGHLY EFFECTIVE PEOPLE

The goal of the Supervisor Training Series sessions is to make informed supervisors who have a clear understanding of what is expected of them as a supervisor in this organization.

Current: Defusing Hostility

The Defusing Hostility Training Program is a practical approach to understanding and helping those who are angry with us. The objectives are threefold:

* to better understand our own feelings and behaviors when we are confronted by another's anger,
* to increase our awareness of the causes of anger and hostility,
* to learn the skills that can transform a confrontation into a positive resolution.

This training program is video-based with a discussion guide which provides an outline of the program and questions useful for a group discussion.

The participant's workbook assists in integrating the skills of "Defusing Hostility" into the employee's daily life. The program is designed to reap the benefits of increased confidence, understanding and ability when dealing with conflict.

This program has been very well received, both by supervisors and front line employees, based on program evaluation comments. The program will continue to be offered on a quarterly basis to all interested employees.

Current: Creating Satisfied Citizens and Customers

The ability to deliver service excellence is one of the most valuable assets a city possesses. Citizens, business people and council members want and expect excellent service equal to or exceeding the standard set by many of the top performing private corporations. We have moved into the era of service management, where not-for-profit organizations must strategically think about service, build a strong service orientation around and into their future and manage the design, development and delivery of service effectively and efficiently.

Service management means making the whole organization a customer-driven entity. It is a top-down approach maximizing the "service users" (now called customers) experience with the organization. Creating Satisfied Citizens and Customers is more than a

carefully designed service package. It is a comprehensive, organization-wide program that focuses the department's attention to one end: delivering quality service and customer satisfaction.

This program is organized into modules of study, each module containing several media. Participants read text, watch videotapes and join in discussions to exchange ideas with each other. The main components of the Creating Satisfied Citizens and Customers program include:

INTRODUCTION
MODULE 1: A MODEL FOR CITIZEN/CUSTOMER RELATIONSHIPS
MODULE 2: RECOGNIZING THE DIFFICULT CITIZEN/CUSTOMER
MODULE 3: MANAGING CITIZEN/CUSTOMER EXPECTATIONS
MODULE 4: REDUCING STRESS
MODULE 5: BUILDING RAPPORT
MODULE 6: CREATING POSITIVE OUTCOMES
MODULE 7: EXTRAORDINARY CITIZEN/CUSTOMER RELATIONS

This program was selected after extensively previewing over thirty customer service programs. It was the only program found that exclusively portrays municipal employee experiences. As a result of the use of "real" situations that employees face on the job, the transfer of skills back to the job is enhanced.

I will continue to offer this program to employees on a quarterly basis.

Current: Administrative Network

We recognize that the role of our office support staff has undergone dramatic changes in the past few years. In an effort to communicate and clarify the ongoing changes, the Administrative Network was developed.

The sessions are designed to provide our Administrative staff with the skills and knowledge to respond to the ongoing advances being made in the workplace.

The monthly sessions have focused on the following subjects:

* ADMINISTRATIVE RECLASSIFICATION: THE BIG PICTURE
* STRESS MANAGEMENT
* CHOICES AND CHANGES
* AIDS: WHAT EVERY EMPLOYEE SHOULD KNOW
* UPWARD COMMUNICATION (OR HOW TO MANAGE YOUR SUPERVISOR)
* YOU DON'T HAVE TO GO HOME FROM WORK EXHAUSTED
* HOW TO PREPARE FOR A PERFORMANCE EVALUATION
* EFFECTIVE COMMUNICATION MANAGEMENT
* RECORDS RETENTION/MAILING PROCEDURES
* HARASSMENT PREVENTION
* DEALING WITH DIFFICULT PEOPLE

The goal of the Network sessions is to place a great deal of emphasis on human relations skills as well as organization-wide consistency in application of procedures.

Over seventy employees have voluntarily participated in this monthly training program in the past year. The feedback has been very positive. The Administrative Network sessions will continue to be offered on a monthly basis.

Current: Policy Briefings

During the 91/92 fiscal year, the City of Carrollton revised and redistributed several Administrative Directives. One, the Disability Policy, was presented to all city employees at Policy Briefing Meetings.

During the briefings, the Administrative Directive was thoroughly explained and employees were given the opportunity to ask questions for clarification.

This approach appears to be an effective method for distribution of new or revised Administrative Directives. Using this approach ensures the Human Resources department that questions are encouraged and appropriately addressed.

In the future, when policies that have a substantial impact on all employees in this organization are created or revised, Policy Briefings will be instituted to disseminate the information.

Current: Grievance Review Panel Training

During the 1990/91 fiscal year, the city implemented a Grievance Procedure Administrative Directive. The policy provides specific guidelines to employees concerning steps to take to resolve a conflict. Throughout the policy, emphasis is placed on reaching a resolution to the conflict at the lowest level possible in the organization, preferably with the immediate supervisor.

The fourth and final step of the policy outlines the use of a Grievance Review Panel. The Grievance Review Panel is a five-person committee, randomly selected from a panelist pool, consisting of one Department Director/Division Manager, one supervisor and three non-supervisory employees.

Last year, the City Manager selected the thirty employees (6 Department Directors/Division Managers, 6 supervisors and 18 non-supervisory employees) to serve on the Grievance Review Panel pool, and an eight hour training session was conducted. The training session covered the purpose of the policy, steps in the grievance process, the panel hearing, panelist roles and authority, and concluded with a mock panel hearing.

In the past fiscal year, one employee grievance reached Step Four, so trained panel members were selected to serve on the grievance panel. At the time of the selection, a brief review of the Grievance Administrative Directive was conducted.

After the panel hearing was held, a debriefing meeting was conducted with the panelists. The purpose of the debriefing was to obtain information pertinent to future panel training sessions.

Additional Grievance Review Panel training will occur after the first of the year to replace the panelists who will rotate off of the certified panelist list.

Current: Library In-Service/Americans With Disabilities Act

The employment title of the ADA went into effect on July 26, 1992. The impact of this Act on our organization is extensive and profound. The ADA's purpose is to remove the barriers preventing qualified individuals with disabilities from enjoying the same employment opportunities available to persons without disabilities.

In general, employers are required to consider whether barriers created by a disability could be removed through reasonable accommodations, so that disabled persons may compete on the same standards and requirements the employer expects from persons who are not disabled.

In the Library In-Service/ADA training session, different aspects of the Act were examined as well as expanding/changing supervisory responsibilities due to the ACT's implementation. A panel of persons with disabilities was assembled to answer specific questions concerning the Act and appropriate customer service responses.

The ADA portion of the Library In-Service was a half-day program. Several of the employees stated on their evaluations that additional time could have been spent discussing various ADA issues.

Current: Professional Development Series

The Professional Development Series was implemented in the 91/92 fiscal year. This monthly training series is designed for all employees on the Professional pay plan. These employees voluntarily attend the sessions where topics ranging from Public Speaking Skills to How to Conduct an Effective Meeting are discussed.

The session topics were generated at the initial P.D.S. session,so the employees have a vested interest in the sessions. Although the P.D.S. has been somewhat low in attendance, due to the holidays, I feel that a core group of attendees will be established after the first of the year.

The series will continue to be offered on a monthly basis in the 92/93 fiscal year.

Future Training Programs

"When it comes to the future, there are three kinds of people:
those who let it happen,
those who make it happen,
and those who wonder what happened."

Anonymous

This section contains training programs which have been approved by the City Manager and will be implemented in this fiscal year.

Future: Coaches/Instant Replay

In adopting Positive Discipline, we took a major step toward requiring personal responsibility, individual decision making, and true self-discipline of all of our employees. With these high expectations for employees comes a corresponding responsibility on our supervisors part. Though our supervisors were trained to immediately utilize the supervisory method of Positive Discipline, a plan for ongoing training is necessary to reinforce, expand and internalize these skills so that Positive Discipline continues to meet the challenges of an ever changing organizational environment.

In keeping with our commitment to Positive Discipline, we will offer continued implementation of the Coaches training program. The coaches training, initially presented by Performance Systems, is a unique and valuable tool in reinforcing and expanding skills in the area of coaching for improved performance. Coaches are trained to help supervisors become more effective in one-on-one conversations with subordinates about improving performance.

The Coaches training has two key objectives: (1) teach potential coaches the fine art of coaching and (2) develop a team of "goodwill ambassadors." As a group they benefit from shared experiences, gaining insights on how to handle difficult issues effectively in the future.

Benefits to our organization include: Increased supervisory self-confidence, less "fire-fighting", reduction in grievances, and increased morale.

The Coaches training will be enhanced by adding the Instant Replay component to the program. Using video technology with results-oriented skills training, the workshop provides supervisors with a clear picture of where improvement are needed as well as reinforcement of what they are doing well....their own instant replay.

The Coaches/Instant Replay training is a two-day workshop. Class size is typically 10-15 participants. Targeted supervisors would attend the training.

Future: Leader Effectiveness Training

L.E.T. stands for Leader Effectiveness Training, a program designed to help supervisors increase productivity through employee participation.

L.E.T. applications include:

* implementing systems that involve employee goal setting
* implementing "no-lose" problem-solving and conflict resolution at all levels in the organization
* confronting sub-par performance and non-productive behavior without damaging working relationships
* making staff meetings more productive

Key Features

The L.E.T. course offers a Problem Ownership Model for selecting the appropriate skill to use in preventing or dealing with all kinds of people problems. In terms of the model, a problem is any behavior that decreases productive work time.

Three types of skills are taught: Facilitating skills are used when dealing with the problems and concerns with others. Confronting skills are used when one's own problems and concerns must be the top priority. Finally, no-lose problem-solving is used when in conflict with others or for resolving conflict between others. Having learned the comprehensive model, participants are able to "plug" L.E.T. skills into an infinite number of everyday work situations.

Initially, selected supervisors would have attended this 4-day training session. However, supervisors do not feel they can be away from the office for that length of time. So, the segments will be shortened and presented over a longer period of time. Supervisors from various departments will be invited to attend.

Future: Basic Supervision

What are the expectations of being a supervisor? What skills and behaviors make good supervisors great? What kind of issues do new supervisors face?

Why do some very technically capable people fail as supervisors while others who do not appear especially promising are unexpectedly successful? There are strong indications that among the major reasons for success or failure as a supervisor are:

1. The match between one's own values and needs, and the satisfactions and demands of supervision.

2. The degree of insight into complex human interactions.

3. The ability to be tough when toughness is called for and sensitive when sensitivity is demanded.

The purpose of this two day workshop is to provide participants with an accurate and balanced picture of the reward and demands of supervision and thereby allow them to make a more informed initial decision as to whether or not to pursue a career in supervision. For who can better determine whether supervision "fits" than the individual concerned?

Target audience: all non-supervisory employees who are considered to have high potential for supervision.

To make the transition from non-supervisor to supervisor, formal training and strong support and continuing encouragement of their new supervisors is needed. When the transition is a success, our organization has gained an invaluable asset: highly motivated supervisors, who are ready to take on higher levels of responsibility, who are already familiar with the operations, needs and goals of our organization and who now have a vested interest in its future prosperity.

The selected training program would help to prepare potential supervisors to take their important step into management. It should represent the supervisors job-both upside and downside in a clear, honest and direct way. It must focus on interpersonal problems that supervisors often encounter in the beginning.

This course would be offered on a voluntary basis. Employees would have the opportunity to participate with their supervisors approval.

I recommend purchasing a package that can be easily adapted to meet our organizational needs.

Future: Front Line Supervision

The job of the supervisor in today's workplace is indeed a difficult one. Technology in the work environment is constantly changing. Services must be provided in efficient, timely cost-effective ways. Most importantly, employees must effectively interact with their supervisors, co-workers and citizens on an ongoing basis. Interpersonal and human relations skills are becoming more and more vital to the current and continued success of the organization.

Supervisors cannot hope to perform their jobs at their highest levels without constantly learning and educating themselves through personal reading and training. All the current theories, information and practices will not help a supervisor to become effective unless this knowledge and information are put to use in the actual work environment.

The Front Line Supervision series is designed for Crew Leaders, supervisors who interact and work with the employees on an hourly basis. The sessions are designed to cover major challenges supervisors face on the job. The sessions will address what supervisors should do, how they should do it and why it must be done, in order to make the supervisors at the least, effective, and at best, outstanding.

The program will provide knowledge, methods and skills necessary to become a successful supervisor. Sessions will be offered on a bi-monthly basis to all Crew Leaders. Sessions will begin in January, 1993.

Future: Employee Involvement Teams

The City of Carrollton prides itself in being a participative organization. In fact, many of our supervisors are currently using participative styles within their divisions. However, our employees sometimes provide feedback stating that their ideas are not being listened to and that they would like to provide suggestions concerning their work units. Employee Involvement Teams would facilitate this process.

Empowered organizations believe in the value of empowerment and are committed to the conviction that people make the difference. An empowered culture reinforces the values of employee participation, involvement and job ownership.

E.I.T.'s represent a bottom-up, rather than top-down effort where the people actually performing the tasks identify and solve work problems and implement their solutions. Specially, the objectives of the involvement program are to:

* Increase employee morale, enthusiasm and pride by giving them a voice in decision-making.
* Improve communication between supervisors and employees.
* Develop employee skills and knowledge.
* Improve the quality of services our organization provides.

Implementation

In the last fiscal year, Department Directors were asked to volunteer for the pilot program. The Public Works Department was selected to serve as the pilot Involvement Team. Employees will soon be selected to serve on the E.I.T. A maximum of ten volunteers will be selected. This number is most conducive to effective problem-solving efforts. Once the E.I.T. members have been selected, an orientation will be conducted with all persons involved.

E.I.T.'s can provide many benefits to an organization, if they are conducted adequately. Proper facilitation, timing and commitment is what it takes for Employee Involvement Teams to be a success.

Proposed Training Programs

The road to quality never ends. But sometimes it requires a new course.

On the following pages, I have targeted several additional training programs to be considered for future implementation.

Proposed: Workplace Literacy

The City of Carrollton recognizes that adult literacy is an immense economic and social problem in America. Illiteracy now cripples some 55 million Americans and the crisis is especially severe in Texas. Over two million Texans are illiterate, including 200,000 in Dallas alone. Texas ranks 47th among all states in citizen literacy, and the resulting toll in crime, unemployment and public expense to the state is enormous.

As a result of these statistics and the desire to increase the workplace potential of our employees, a proposal to provide a basic workplace literacy program, is being developed. It will be proposed to enlist the services of a local not-for-profit organization to assist in the development of our organization program.

The desire to upgrade current workers skills, changes in work processes and technologies, and the educational shortcomings of entry-level workers have led many employers to institute basic skills training programs. Adult learners have distinctive needs. They bring unique goals, challenges and life experiences to the learning center. A successful adult learning program must meet the needs for relevance, privacy, control and success.

In our changing economy, more of our jobs require workers with basic reading, writing and mathematical skills. At the same time, the number of American adults who lack these critical skills is growing at an alarming rate. We feel that many of our employees could benefit from this type of education program.

Proposed: Business As Unusual

Business as Unusual is a training program that is appropriate for supervisors at all levels. The objectives of this program are for participants to:

* Learn the dynamics of change and impact on the organization.
* Identify strategies required to reduce loss of productivity, morale and direction.
* Be able to spot - in themselves and others - the most common myths and faulty assumptions people adopt when change is in the air. They will also learn how to counter those with accurate communication and specific priorities.
* Explore signs of change resistance and identify activities to reduce the duration and intensity of this dynamic.
* Identify critical change leadership traits against which the participants assess themselves and activities to facilitate their growth as "change managers".

This training is appropriate for implementation at this time due to the numerous organizational changes that have occurred in the past few years. These changes range from the use of computers by virtually all employees to the implementation of new Administrative Directives. Most people are not comfortable with change and reactions to change vary from employee to employee. Our supervisors must be fully equipped to deal with those reactions and have the skills to successfully implement future changes.

The training is designed to build on the guidelines presented in the book Business as Unusual by providing a forum for application of these principles of change to their daily challenges. This is accomplished through a combination of lecturettes, group and individual discovery exercises, and both large and small group exercises/discussions of the principles presented and their applications to specific issues.

The training is designed to allow delivery in four or eight hours. It would be offered on a quarterly basis to interested supervisors.

Proposed: The Employee Workshop For Organizational Change

This training is appropriate for employees at any level, but does not address management issues. The training is designed such that participants will:

* Understand that change is a predictable part of the future in any business endeavor.
* Explore sights of change resistance and ways to react to change so that the ongoing changes are less painful and more productive.
* Identify the most common myths and faulty assumptions they and others will encounter as they navigate change.
* Identify crucial "change agents" traits against which the participants assess themselves and identify activities to improve.
* Create a personal action plan for increasing their ability to deal positively and productively with change.

Again, the organizational changes that have occurred in the past few years are tremendous and make this training session particularly appropriate at this time. Often stress accompanies change and this program helps to identify and address specific reactions to change.

This training is designed in a four-hour format which includes lecturettes, group and individual discovery exercises, and both small and large group discussions of the principles presented in the book The Employee Handbook for Organizational Change and to address the "me issues" that the participants are encountering. The workshop content is practical and focuses on personal job issues.

This session would be offered on a monthly basis to interested employees.

Proposed: Getting To Yes: The Art Of Negotiation

Daily we spend more of our time negotiating with people around us. Not only with people on the outside: citizens, suppliers and contractors. But, with people on the inside: peers and supervisors, coworkers and employees in other departments. Regardless of our positions, negotiation is a daily fact of life.

Yet, many employees often feel that negotiation confronts them with a painful choice: either give in to preserve the relationship, or go to battle to win and destroy the relationship. A losing proposition either road you take.

There is a better way to negotiate. The Getting to Yes video workshop on Negotiation demonstrates a clear, concise and proven method of negotiation. It is a straightforward, no-nonsense strategy for pursuing our own interests firmly, while getting along with those whose interests conflict with yours.

This program, presented by members of the Harvard Negotiation Institute, teaches participants how to:

* prepare for negotiation,
* delve beneath positions to discover underlying interests,
* invent better options to satisfy interests on both sides,
* use independent standards to break deadlock when interests are opposed,
* disentangle the people problems from the substance of the negotiation,
* develop your Best Alternative To a Negotiated Agreement (BATNA) so you will know how to proceed, and
* move in an orderly way to closure.

Initially, the Getting To Yes Program would be offered on a quarterly basis to interested supervisors. Later, the program would be open to all employees.

Non-Training Accomplishments

1. Supervisor Training Material. Designed and distributed a variety of training materials to be maintained in the S.T.S Reference Manual.

2. The Idea Generator. Edit and distribute on a bi-monthly basis. Designed to provide current information to all supervisors in our organization.

3. The Employee Edition. Coordinate compilation and distribution of monthly employee newsletter. Direct quarterly Newsletter Advisory Committee meetings.

4. Quarterly Training Calendar. Edit and distribute every three months. Contains all relevant information concerning upcoming training sessions.

5. Policy Briefings. Coordinated facilities and activities for the all-employee Policy Briefings. The Briefings were held to discuss the recently implemented Administrative Directives.

6. Training Assessment. Conducted an assessment of current supervisory skills. The assessment was particularly important because it will helped to determine whether or not we need to continue offering basic personnel, legal and procedural training for our supervisors, or if we can feel comfortable expanding to include other areas of expressed interest.

7. Secret Supporter Program. A volunteer program designed for employees on the Administrative Pay Plan. For a three month period, employees were matched with other employees to act as a "Secret Supporter". As a supporter, the employee sent notes of encouragement, articles of interest and various items that helped the person they were supporting to maintain a positive attitude at work.

   The program was enthusiastically received. Thirty-seven employees participated in the program. Their evaluations state that they would participate again in the future if the program is repeated.

8. Administrative Reference Manual. Began collecting information and material to be included in a comprehensive informative manual to be used by Administrative and support staff in each department. The manual will be distributed in December, 1992.

Future Considerations

People, as in all things in nature, are unique and grow in many directions.

Business Is No Longer "As Usual"

Today's workforce can no longer rely on yesterday's skills. The City of Carrollton is challenging our workers to

.....DO MORE.

The shape of our organization has changed. We're constantly getting leaner, flatter.

Remove layers and you add responsibilities. People must take on tasks not traditionally theirs, tasks they may not have the skills to handle well. Each individual must be willing, able and eager to work with one another to make the most of his/her contribution.

.....DO IT BETTER.

We should constantly be asking ourselves, "How can this be improved?" Each individual must look for and find ways to improve the quality and quantity of services and

.....STAY AHEAD.

The one constant in the work world today is that nothing stays the same. People must do more than simply cope in a changing environment. They must thrive in it. The City of Carrollton Training and Development program is designed to encourage each individual to innovate, to push the organization two steps ahead.

Based on my observations, interviews and evaluations of the training programs that have been offered, I recommend the following:

- continue to solicit input from supervisory and non-supervisory employees concerning future training programs,
- continue the existing programs and consider purchase of the recommended programs,
- continue to provide an annual summary to the City Manager and/or Council members,
- increase the support staff for the training area,
- continue high level of commitment from upper management.

As an organization, we must be willing to provide the time, commitment and resources necessary to make the training program grow and develop. I can help facilitate this process however, continued management support is the key to its ultimate success.

Thank you for giving me the opportunity to coordinate and facilitate the educational process in our organization.

A Conceptual Systems Approach Model for Creating Collaborative Diagnostic Procedures and Strategies in HRD Settings

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Introduction

The purpose of this paper is to introduce a new collaborative diagnostic systems approach model Human Resource Development persons can use in their practice as consultants in various organizational settings. The underlying assumption of this model is that any organization can be perceived as an "open system" with all the parts working together to achieve a common good. Thus, an "open systems" diagnostic model is most appropriate for determining the state or condition of the organization.

Another critical assumption of this paper is that a joint diagnosis between all levels of the client system and the consultant yields a more productive and satisfying intervention than one in which an "expert" consultant is purchased by a client system to give it "the answer." This assumption is consistent with Schein's (1969) process consultant model, Bennis, Benne and Chin's (1969) collaborative change agent strategies, and Gallessich's (1986) collaborative and cyclical process assumptions. In point of fact, this new model assumes the only effective way for creating permanent change is to engage client systems in such a proactive educational process that they take "ownership" and major responsibility for the diagnosis and for the change interventions called for by the diagnosis.

Methodology

This collaborative diagnostic systems approach procedural model employs several standard conventions of systems flow charting. The model has six major steps or activities. The numbering convention is that used in most systems flow charts. That is, 1.0, 2.0.....6.0 indicate the six major activities and processes consultants and clients will employ in their joint diagnosis. Sub system processes (the major process steps sub divided into subordinate "enabling" process steps) also uses conventional numbering. Thus, 1.0 can be further subdivided into 1.1, 1.2, 1.3, etc. Finally, this level can be further subdivided into smaller task analysis steps. Thus, 1.1 can be broken down into steps numbered 1.1.1, 1.1.2, 1.1.3, etc.

Accordingly, the numbering convention looks like this:

1.0	2.0	3.0	4.0..... 6.0
1.1	2.1	3.1	4.1..... 6.1
1.1.1	2.1.1	3.1.1	4.1.1..... 6.1.1
1.1.2	2.1.2	3.1.2	4.1.2..... 6.1.2

While this may seem quite elemental to some readers, experience shows that many readers, unfamiliar with flow charting, do not understand clearly how to number their system and subsystems correctly.

Finally, this systems model employs other flow charting conventions that may be unfamiliar to the reader. First, the rectangular boxes are "process" boxes. They indicate the activities that will transpire in time. Hence, they convey the notion that the model is orderly and approximately linear, moving from one set of actions to another. Solid line arrows moving from left to right or top to bottom and/or bottom to top indicate a "feed forward" activity. That is, the "forward flow of the action" is always indicated by the solid line with the arrow head connecting to the next process box. Some of the solid arrows are "two headed" with arrow heads connecting them to two process boxes. This implies the activity goes back and forth between the two processes until the required action is completed satisfactorily. The dashed or broken line arrows indicate a "feed back" activity. They indicate the "cyclical nature" of the systems model indicating it may be necessary to go back to an earlier process to take care of some action there before going ahead to another activity. Some flow chart users call this an "iterative process" meaning the broken arrow takes one back to a step already completed but which must again be considered in light of new information.

Diamond shaped symbols are "decision points" in the systems model. They signal to the consultant and client system that at these points in the model a "go or no-go" decision must be made before going on to another phase of the model. The words "Yes" or "No" appear next to this symbol. "Yes" is associated with a "feed forward" solid line. "No" is associated with a "feed back" dashed or broken line. In this model there are six diamond shapes indicating critical points in the model. They indicate a decision must be made immediately and cannot be postponed until later since the decision made influences all future activity. Decision points can occur anywhere in a systems model when the model designer wishes to signal to the reader there is a critical decision to be made. In this model decision points occur in the beginning, the middle and the end of the model.

A rectangular symbol with three straight sides and a curved base line such as the following, indicates a hard "paper document" such as a questionnaire, report or some other document. Finally, a curved rectangular figure with a "?" inside it indicates the client system and consultant may add other approaches or activities as needed a that point in the model.

Discussion

Definition of Diagnosis

The literature on consulting is somewhat inconsistent in defining diagnosis. Most often, authorities indicate what the purpose is without really defining it. One then works backward from the purpose and assumes a definitional understanding. For the sake of clarifying this model, the following operational definition is offered:

> Diagnosis is the systematic collaborative process of analyzing an open systems organization to improve both its micro and macro level functioning. This includes, but is not limited to, examining the cause and nature of current problems; determining the discrepancy between a "perfectly functioning system" or an "adequately functioning system" in light of the system's current condition; the mutual collection and analysis of data identifying system malfunctioning, and the translation of identified problem statements into educational and training needs. Such an analysis may occur at two levels simultaneously. It may include the examination of the mission and tasks of micro level subsystem functions. It may also include a macro

level analysis of the client system's culture, (its goals, beliefs, values, and norms); its resources; its leadership styles, decision making processes, and conflict management patterns; its horizontal and lateral communication patterns; and its systemic competition and collaboration styles.

This operational definition is reasonably consistent with Beckard, Bell and Nadler (1985), French and Bell, Jr., Lippitt and Lippitt (1986), and Gallessich (1986) (1986). It differs from Bell and Nadler (1985) and Gallessich (1986) somewhat in its focus on systems analysis as the major tool of diagnosis. It is most like Beckard (1969) and French and Bell (1988) since they too employ systems analysis thinking.

Discussion of the Model

The remainder of this paper addresses the respective steps of the diagnostic model. It should be remembered the model is a joint and mutual activity between client and consultant. It is assumed that each step is done collaboratively. Again note the six steps of the systems model have a number of subordinate or subsystem steps. Each step subordinate to the main step must be considered so the main step can be accomplished completely. The subordinate subsystem steps are often called "enabling" activities or tasks because they enable the completion of the main step.

1.0 Determine the specific level of diagnosis. This step contains three sub steps. When all three of the subordinate steps are completed they "enable" or complete step 1.0.

This step is critical to the diagnostic process. It is quite easy to ignore or misunderstand this activity and "pay the piper" later on. Both the client and consultant must come to agreement about the exact levels of the diagnosis. Clear expectations must be discussed here to determine if one is diagnosing the entire organization or merely a portion of it. This is because what is examined at the "micro" or subsystem level and the ways to examine it are different from examining the "macro" level of the organization. At the micro level of the organization one tends to diagnose divisions, units, committees, small groups, and individuals. Questions concerning skills, attitudes, values, interrelationships, communication patterns, management and supervisory styles and conflict management activities are often the elements examined at the micro levels. While these are also examined at the "macro" level much more is diagnosed. At the macro level one often conducts "environmental scanning" activities (Gallessich 1986. p. 315 ff.). Environmental scanning examines the open systems concepts of the organization which include the interrelationships among and between subordinate subsystems as well as their "boundary permeability". Boundary permeability refers to how effective subsystems are in exchanging resources, personnel, communications, etc., at all levels of the organization and out into their surrounding environments. Macro level diagnosis also might include diagnosing the "culture" of the organization (values, beliefs, myths, etc.) as well as the inter system functioning.

2.0. Select Diagnostic Categories. This activity and its subordinate activities contains a list of suggested organizational categories clients and consultants may wish to examine throughout the diagnosis. These are more illustrative than exhaustive. Clearly, each of the subsystems should be task-analyzed further to assure completeness of the diagnosis.

Worthy of discussion, though, is 2.1 Mission, Goals, Tasks and Functions. Personal and colleague consulting experiences indicate many organizations and their respective subsystems are unclear about their missions. Too often, there has been a 'goal or mission displacement' meaning the original mission/goal has all but disappeared. What remains is often a substitution of the "methods and means" for achieving the mission rather than the mission itself. A case in point may clarify this issue. Often the writer has consulted with private industrial organizations and or military organizations. When queried about their mission the client often described the way to achieve the mission as if it were the mission itself. For example, in a "for-profit" hospital when the hospital administrator and subordinate administrators were asked their mission, the statement they offered was to "provide better patient care." When it was suggested that the true mission for their organization and especially for their stockholders was to "make a sufficient profit" they were offended. After much discussion they realized mission/goal displacement had occurred in their organization. Indeed, because some people in the American culture seem to feel 'making money' is somehow a less worthy goal, these hospital personnel thought the phrase "better patient care" sounded better to their workers and the public. The same occurred in a bank. When asked the mission of the bank, officials stated "to provide better service than any other banking institution." They too were offended when it was suggested the true mission was to turn a handsome profit for their stockholders and the way they did this was by providing "better service than anyone else." There is absolutely nothing wrong in a capitalistic country with a "for profit" organization making money. It is the reason for their existence. When that mission is quite clear, all the subsystems can then be diagnosed to determine how well they contribute to the mission. However, when 'mission displacement' occurs, then the subsystems really do not know how their respective system contributes to the whole.

Another interesting phenomenon is encountered often. Many new administrators and/or managers assume "reorganization" is a healthy and helpful way for a division or unit to move forward. In point of fact, it is not! In good systems thinking if the mission is quite clear and subsystems are structured correctly to help achieve the overall mission there is absolutely no reason to restructure. The old architectural adage that "structure follows function" is absolutely true. One should restructure only when it is clear that (1) the subsystems are not structured correctly to support and achieve the understood mission, or (2) the mission has changed so restructuring is necessary to meet the new mission

Clients and consultants would do well to spend considerable time clarifying the critical element of the mission of the entire organization. Then they will better understand the subsystems' missions and structures and how they support and enable the mission.

3.0. Create Criteria of Adequate Functioning. This process activity contains only three subsystem steps. However, they are very important for mutual diagnosis. This step might be thought of as the "model building" step. The client must decide if a "perfectly" functioning system is required or will an "adequately" functioning system suffice.

How "perfect" does the system have to be for the client system? What would a perfect system look like? Here a joint model building process can determine whether a superior or perfect system is possible or even desirable given all the constraints with which the organization must contend. Is the technology available currently to create the perfect system? Are the funds and capital resources available? What about the human resources? Are they currently available or must a tremendous training program be generated to create a cadre of trained and capable persons?

What would a model of an "adequately" functioning system look like? Given some of the constraints and parameters the organization faces, would a "less than perfect system," a "work around," suffice for the time being until resources are available? Thus, as the diamond shapes indicate, some decision must be made here before further diagnosis is possible. The two models ("perfect" vs. adequate") are compared and a "discrepancy diagnosis" is constructed to determine which is the best way to go. The "discrepancy diagnosis" is simply the gap between the desired perfect system and the acceptable adequately functioning system.

4.0. Collect Data. There are four subsystem processes connected with this activity.

Activity 4.1 "Determine the Kinds of Data Required" indicates a rather interesting process. Clients and consultants must have some understanding of the nature of unobtrusive and obtrusive data collection activities and descriptive versus inferential statistical approaches.

Obtrusive data collection assumes data are collected directly from the people involved in the diagnosis. Indeed, they themselves, may collect data from each other to determine how others perceive their work skills, attitudes, behaviors, etc. If one is committed to joint and mutual diagnosis then this "obtrusive" approach is called for. Obtrusive data collection, however, is obtrusive! It sometimes gets in the way of the work-flow. It may even halt work for a short time until the diagnostic activity is completed. However, if the intent of the diagnosis is to determine the perceptions of persons who carry on daily work activities, then obtrusive measures of data collection is appropriate.

Suppose, however, there is the need to get at perceptions, values, beliefs, administrative policies and procedures and interpersonal relations related to very personal and/or sensitive areas. Often the very people who could provide this information may lack a certain awareness of their existence or may be quite resistant to divulging this data. In this situation unobtrusive data collection approaches may be called for. Often "process observations" are used to examine these areas. The whole sub field of "organization development" is dedicated to diagnosing and examining multi-levels of interpersonal processes (Gallessich 1986, Chap.. 9; Beckard 1969).

Other sources of unobtrusive data may come from archives within the organization. Annual reports, former consultant reports, strategic planning committee reports, etc. are all indicators of organizational health and effectiveness (Gallessich 1986). The examination of customers and client complaints, evidences of funding and revenue sources and conditions governing these resources, and local community attitudes and expectations toward the organization are also measures of unobtrusive data. In short, data not directly obtained from the people themselves are also important in diagnosing organizational health and effectiveness.

Should the data merely be descriptive or should it be based on probability models of chance expectations? That depends upon the level and depth of the desired diagnosis. If a rather informal diagnosis of one small subsystem is desired then descriptive statistics will suffice. If an in-depth and exhaustive diagnosis is required, then inferential statistical models should be employed. Today's personal computer statistical software programs are excellent in analyzing the data and then reporting the findings with the appropriate statistical levels of probability. The consultant may need the help of a professional statistician to interpret some of the more sophisticated statistical models before gaining a clear understanding of the data's import. The danger may be "data overload." These programs can generate huge quantities of information some of which may not be as helpful as one might suppose. Nevertheless, the power of these new statistical application programs for analytical purposes is tremendous and should be used.

The activity numbered 4.2 "Determine the sources of Data" forces the client and consultant to identify the animate and inanimate sources of data. What people will be involved? Key leaders? Supervisory and management levels? People in training programs? Community people? Inanimate sources of data would come from organizational histories, flowcharts, budgets, mission statements, production reports, etc.

The activity numbered 4.3 "Determine Ways of Collecting Data" refers to using standardized instruments or specially constructed ones. The advantage of standardized instruments is that their statistical properties are established and there are norming data available against which an organization may be compared. Several sources for standardized instruments exist that help the client-consultant team choose the most useful one. The most scholarly is Burros' (1990) Mental Measurement Year Book. This series of reference books found in university libraries identifies nearly all of the published instruments that have been normed. Often there are short critiques of the instrument as well. Another helpful source is the University Associates Annual Handbooks and the University Associates' Instrument Kit. These two references have a limited number of published instruments. A good many of them, however, have not been normed statistically. The result is one has an instrument already prepared but lacks the norming data with which to compare a specific group.

Specially constructed instruments may be required to focus on organization-specific or situation-specific issues that might be missed if using standardized instruments (Gallessich 1986).

If the decision is to use specially constructed instruments then 4.4 "Create Data Gathering Instruments" comes into play. The fields of educational research, psychometrics, and educational evaluation are rich areas to get information about creating instruments. 4.4.1-4.4.4 merely illustrate some of the team constructed data gathering approaches and strategies available. The choice of these instruments is related to whether obtrusive or unobtrusive data is desired.

5.0. Analyze Data. This process contains four sub activities that, when done successfully, helps the team arrive at what ails the organization. Understandably, a lot of the data will reveal difficulties other than those related to training and education. It may reveal structural defects, ego and/or personality problems or even financial mismanagement. However, the client-consultant team is really looking for issues and problems which may be addressed by the developmental component of the Human Resources division rather than by the management component. Put another way, not all identified problems can or should be met or solved by training and education alone. Some of the problems are better addressed by the Human Resources Management division or a higher level of the organization.

Once the team has collected all the data how do they analyze and interpret it? This part of the diagnosis often strikes fear into the team because they have so much data. The answer is not always so obvious either. Diagnosis is not research where one is concerned to test hypothesis and trace causal linkages. Nor is it evaluation where one is determining the worth or value of a program. Rather, diagnosis is an attempt to take a 'snap shot' of the organization at a given point in time to determine its health and identify some interventions to help it grow.

Thus, what is required is a simple plan of analysis whereby the client-consultant team can assess the data before them. To that end the writer espouses the Symptom-Syndrome-Problem strategy for managing and interpreting the data. It is a straightforward and easy process for sifting through data to determine the current health status of the organization and its subsystems.

This analysis and interpretation system is encapsulated in sub-processes 5.1-5.4. The progression of this Symptom-Syndrome-Problem strategy is as follows. First the data are treated statistically either by inferential or descriptive approaches. Then, one by one, the various symptoms (individual "difficulties" or variables) are identified (5.1) Symptoms may be likened to the discrepancy between what ought to be in a healthy organization and what "really is" in the organization. They are the "gaps" revealed when one compares the current behaviors of individuals and the organization with a desirable individual and a relatively healthy organization. Symptoms may be variables such as "lateness to work," "ill tempered people," "high rates of turnover," "fierce interdepartmental competition," "low morale," etc. They are similar to the variables or indicators physicians look for when a patient visits them. They are the "temperature," "vital signs," and "strep throat" indicators of the organization.

No one single symptom is directly related to one problem. Several or even many symptoms may point to one problem. The danger is trying to "map" one symptom to one problem. Just as a patient may "present" a number of symptoms to a physician before the doctor can diagnose the illness, so, too, many organizational and individual symptoms may "present" themselves to the client-consultant team for analysis and interpretation. When the team finishes steps 5.1-5.1.1, a list of symptoms will be identified.

The lists of symptoms need to be clustered together and classified into larger units called syndromes (5.2). Here the team is looking for large units of symptoms that naturally hold together and point to potential problems. There are fewer syndromes than there are symptoms. This refinement step helps the team perceive the health of the system in a more global fashion. These syndromes are the "presenting behaviors" of the system. They point to specific areas of difficulties the consulting team must address through training.

The consulting team then further refines the lists of syndromes. The syndromes are clustered together into larger units. These units are termed the "problems." There will be fewer problems then there are syndromes. There may be only a handful of training and education problems that emerge from the original symptoms list.

Figure 1. A Client-Consultant Systems Analysis Collaborative Diagnostic Model

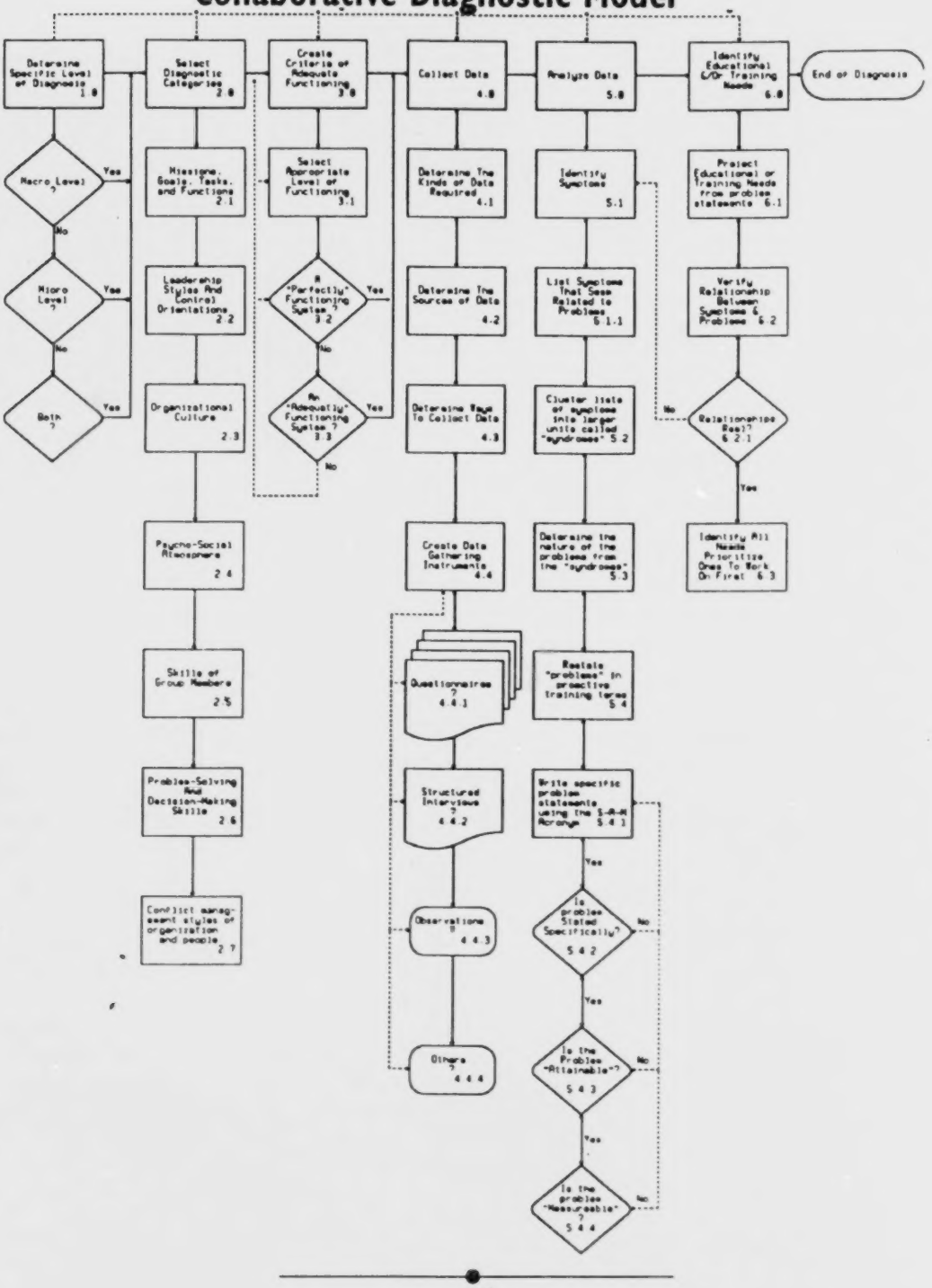
Determine Specific Level of Diagnosis 1.0
Select Diagnostic Categories 2.0
Create Criteria of Adequate Functioning 3.0
Collect Data 4.0
Analyze Data 5.0
Identify Educational &/Or Training Needs 6.0
End of Diagnosis
Macro Level ?
Yes
No
Micro Level ?
Yes
No
Both ?
Yes
Missions, Goals, Tasks, and Functions 2.1
Leadership Styles And Control Orientations 2.2
Organizational Culture 2.3
Psycho-Social Atmosphere 2.4
Skills of Group Members 2.5
Problem-Solving And Decision-Making Skills 2.6
Conflict management styles of organization and people 2.7
Select Appropriate Level of Functioning 3.1
A "Perfectly" Functioning System ? 3.2
Yes
No
An "Adequately" Functioning System ? 3.3
Yes
No
Determine The Kinds of Data Required 4.1
Determine The Sources of Data 4.2
Determine Ways To Collect Data 4.3
Create Data Gathering Instruments 4.4
Questionnaires ? 4.4.1
Structured Interviews ? 4.4.2
Observations ? 4.4.3
Others ? 4.4.4
Identify Symptoms 5.1
List Symptoms That Seem Related to Problems 5.1.1
Cluster lists of symptoms into larger units called "syndromes" 5.2
Determine the nature of the problems from the "syndromes" 5.3
Restate "problems" in prospective training terms 5.4
Write specific problem statements using the S-A-M Acronym 5.4.1
Is problem Stated Specifically? 5.4.2
No
Yes
Is the Problem "Attainable"? 5.4.3
No
Yes
Is the problem "Measureable" ? 5.4.4
No
Project Educational or Training Needs from problem statements 6.1
Verify Relationship Between Symptoms & Problems 6.2
Relationships Real? 6.2.1
No
Yes
Identify All Needs Prioritize Ones To Work On First 6.3

Figure 2. Graphic Portrayal of The Symptom → Syndrome → Problem Data Analysis Process

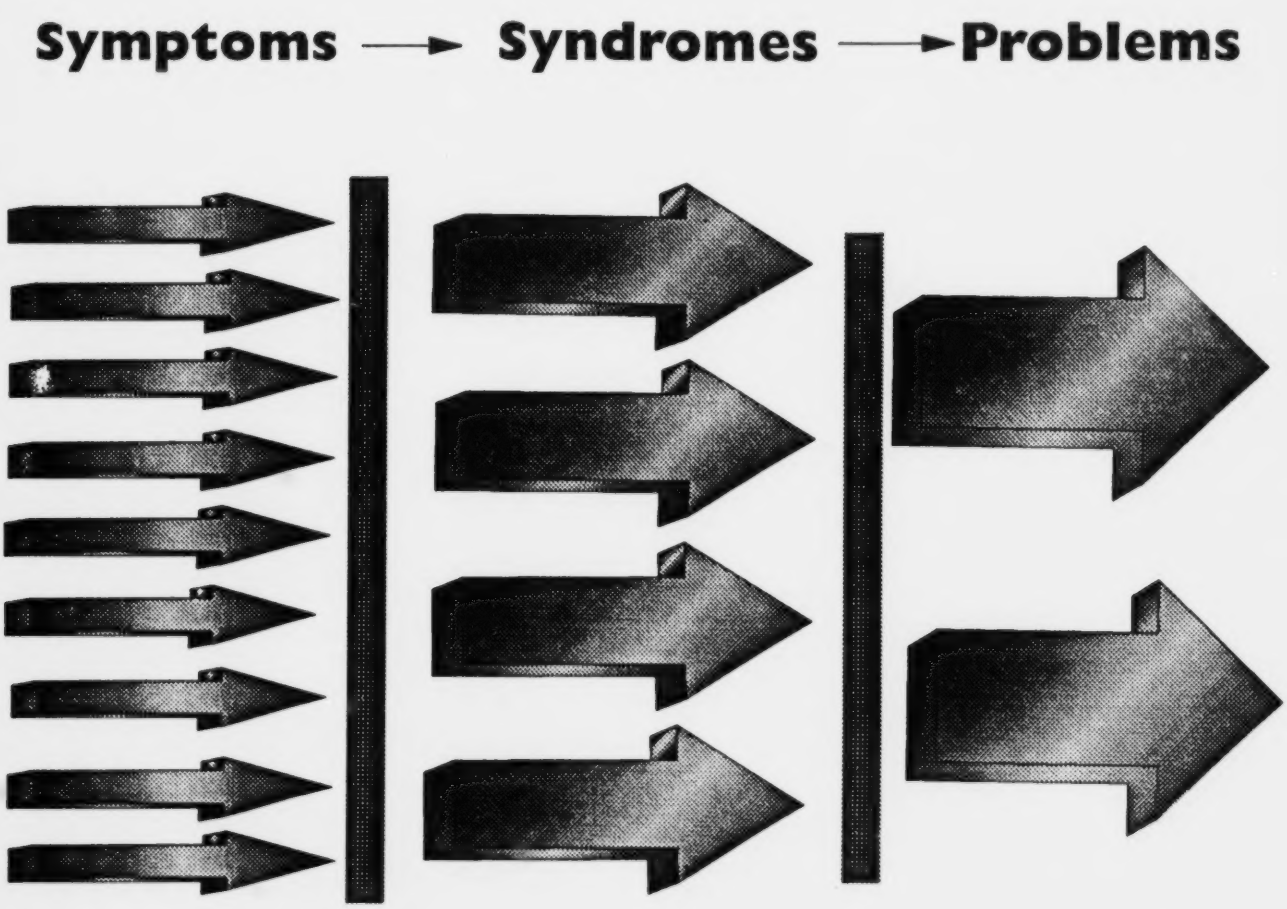

Figure 2 portrays graphically this concept of refining symptoms to syndromes and then classifying them into problems. This process takes some time to accomplish. The client-consultant team must sift through large quantities of data and then begin listing them. The tried and true method of using newsprint taped to walls is useful in getting a global understanding of the data. The data may reveal some sensitive areas. It is well for the team to remain somewhat detached and objective in its deliberations at this point. Premature conclusions can wreck havoc upon clear and logical deliberations.

Sub processes 5.4-5.4.5 moves the team from data analysis and interpretation to problem statement. When step 5.3, "Determine the nature of the problems from the Syndromes," is completed, the team must translate the identified problems into more accurate statements of the problem. The author finds using the acronym S-A-M to be helpful. S stands for "specific." The problem statement must be written in the most specific manner possible. For example, the statement "we have a lot of unhappy people" is so general it does not give much direction to the team. However, the statement "our people have low morale because they have not had a pay raise in five years" is much more precise. It specifically identifies what the trouble is and what is causing it. A stands for "attainable." Is this a problem the organization can overcome within a reasonable time limit through training? The statement "we have a lot of unhappy people because the economy is in a state of decline" is difficult for the team to approach. The economy is perhaps so bad nothing can be done. The team should not waste its efforts here. However, if it is clear that the organization has made some handsome profits and there is a good chance new training opportunities are on the horizon, the team can get a handle on this problem. It is attainable. M stands for measurable or observable. Measurable and observable suggests a comparative process. There is evidence either from past experience or from experience in other industries the problem can be overcome or partially dealt with by training efforts. It allows the diagnostic team to say the problem can be attacked by training and/or education or that it is a systemic problem better dealt with at other levels of the organization.

6.0 Identify Educational &/or Training Needs. This is probably the easiest step of all. The hard work already occurred in the analysis and interpretation step (5.0-5.4.4). Here the client-consultant team is merely attempting to validate and verify the existence of the identified problems. This is accomplished by re-examining the existing relationships between the multiplicity of symptoms and the now refined problem statements. It is a cautionary step to help the diagnostic team maintain its logical and detached approach to the data findings.

Note in step 6.2.1 the last critical decision of the diagnostic process is considered. The team once again recycles back to steps 5.1-5.4.4 just to be sure of their findings. Since training is expensive, verification is important before suggesting training interventions of any magnitude.

In step 6.3, "Identify all Needs: Prioritize Ones to work on First," the team rank-orders the identified problems and needs in terms of the most pressing ones and the likelihood training will help alleviate them.

Summary

This paper introduced a new collaborative systems approach model for diagnosing micro and macro levels of organizations. Its intent is to provide HRD professionals with the procedures and suggested tools essential for identifying existing problems which may then be corrected by various training interventions. The overarching assumptions and underlying philosophy of this diagnostic process is that it is a team effort between a client system and a consultant. This facilitates a proactive "ownership" for the process by the client system while permitting the consultant to guide and educate the client system in the process. If these steps are followed faithfully the team will have identified the critical and immediate issues an organization must deal with to achieve healthy functioning.

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The Theory of Margin as an HRD Problem-Solving Tool for Coping with Life Stresses

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Introduction

The purpose of this paper is to present a theoretical framework for HRD professionals to assist others in their organizations assess their particular life situations and then do something about it. It offers a paper and pencil process for people to examine the various work and personal loads with which they must content; the powers they posses to discharge their loads; and then to create favorable margin in their lives by manipulating both the loads and powers elements. Successful use of this approach has demonstrated a viable vehicle for empowering personnel into new and creative realms.

Discussion

McClusky's (1974, 1990) Load-Power concept (The Theory of Margin) is a theoretical construct that attempts to explain human behavior as it interacts with its environment. McClusky (1974, 1990), therefore, belongs to that school of Psychology called phenomenology that uses the S-O-R paradigm or formula. This "school," in contrast to the behaviorist school, believes that there is an "intervening variables" between a stimulus (S) and a response (R). That 'intervening variable' is the "organism" (O) or the person's mind that accounts for individual differences in responses to stimuli. The basic tenant of the phenomenologists is revealed in the word "phenomenology" itself. The root word from which phenomenology comes is nous (nous). In ancient Greek this word means "mind" and denotes the faculty of physical and intellectual perception. Thus, "phenomena" is any occurrence or fact that is directly perceptible to one's senses.

Phenomenologists believe that individuals respond to stimuli based on their past perceptions of similar stimuli or of their perception of their environment in which the stimuli is found. Thus, the way one "perceives" or "apprehends" the environment is largely a product of one's mind. That is, all stimuli can be described objectively, but they are internalized and given subjective meanings by the mind. Consequently, the stimulus (S) is reshaped by the mind of the organism (0) and a variety of responses are possible from the one stimulus. Hence, it can be seen that an individual's subjective perception of a stimulus determines whether he/she will respond positively or negatively to it.

McClusky's (1974, 1990) concern, therefore, is to help people perceive and understand the variety of intervening variables that trigger their many responses in life. As a theoretical construct the Load-Power concept is simply another helpful way to view life and attempt to explain human behavior.

McClusky (1974, 1990) suggests that the entire adult life span can be viewed as a process in which each of us attempts to create enough "margin" is "surplus." The Theory of Margin is composed of two interrelated component parts; the first is "load" and the

second is "power."(McClusky 1974, 1990). The margin one has is based on the relationship of load to power. Simply put, margin means having a surplus of power available to an individual beyond that required to handle his/her load.

Taken as a whole, the Theory of Margin suggests that there is a "grand strategy" that occurs throughout life. This strategy consists in our ability to juggle the relationship between the loads and powers we possess so that we can have more power going for us than the loads we must carry. When we have more power over our loads, we have "margin" or sufficient surplus of resources to meet the challenges of our adult lives. The following diagram illustrates the idea more graphically:

The Load Component

"Loads" are the demands or requirements placed upon an individual either by the self or by society. As one moves throughout the life span the various social roles we play impose upon us societal expectations that need to be met. For example, people are generally expected to care for their own family's needs in terms of food, shelter, transportation, medical needs, and clothing. People are also expected to be competent workers on the job, to get along with others, and to contribute to the common weal. The ability to meet these societal expectations is often related to the socioeconomic status of people. Those who must struggle with limited or low incomes may perceive these family burdens as "heavy loads" imposed upon them. Others with above average incomes may perceive these expectations as "light loads."

Individuals also impose loads upon themselves. For example, one's personal ambitions for success financially, on the job, or even for an elected office in some prominent association can add a new psychological dimension to the load component. It is literally possible that one's own ambitions can drive him/her beyond what he/she is capable of bearing. In this instance one can become "overloaded" and slip into a severe period of stress and crises and the possibility of a breakdown may occur.

It is clear that subjective perception is an intervening variable as one responds to his/her loads. If one perceives the loads as 'easy to discharge or manage' the individual keeps them in the realm of the external environment. That is, they remain "outside" the individual in his/her external world. If, however, these 'loads' begin to bother a person seriously such that every waking moment is preoccupied by them it may be said that these loads are now internalized and are part of a person's internal environment." Thus, by the process of perception, the loads that were external now become internal and may be potentially dangerous to one's emotional health.

The Power Component

"Powers" refer to the resources one possesses in any given moment to meet and manage the loads we carry. Powers might consist of resources such as money, competencies, personal possessions, friends, job position, age, colleagues, potentiality, etc. At any given phase in life the amount of powers we possess will probably vary. For example, it is often true that middle aged and/or older adults may have more possessions or finances than young adults just starting out in life. It is also often true that the younger adult may actually require more money to meet brand new loads (such as money for school, house mortgages, cars, etc.) than older adults who have built up some of these resources. Hence, young adults may have less 'power' to carry their loads while, conceivably, the older adult may have considerably more power to carry his/her loads.

Subjective perception is again an intervening variable as one responds to his/her sense of possessing or not possessing sufficient power to discharge the loads. That individual who objectively enumerates his/her resources to discharge the loads tends to keep these "powers" in his/her external environment. However, because the person may have such a surplus of resources or powers he/she may have very strong and positive feelings of self worth and confidence. In this instance, the 'powers' have been internalized into one's subjective being and it may be said that the powers now exist in one's "internal environment" in a very positive manner.

The Margin Component

Margin is the ratio or residual that exists at any given time between one's loads and powers. In one sense it may be thought of as the psychological safety factor that exists within us as we strive to manage our loads by our powers. It is a "surplus of power" existing in our psychological make-up at any given time that we may call upon if necessary to meet life's demands. Thus, clearly we are dealing with a ratio that exists between the load and power components. McClusky (1990 p. 153), therefore notes that:

> ....the key to the meaning of margin lies not only in the subconcepts of Load and Power but even more in the relationship between them. For example, the amount of Power a person possesses will obviously have a strong bearing on the level and range of his performance. But the strategic factor for a person's selfhood is the surplus revealed by the Load Power ratio which he can apply to the achievement of preferential development.

Obtaining a favorable margin requires the manipulation of the load and power components. If we reduce the Load or if we increase the Power the Margin in increased. In some rare instances, (for example, an unmotivated and apathetic learner) it may be desirable to decrease the margin. This is done by increasing the Load and decreasing the Power.

Psychological danger exists when the Loads (external and internal) consistently matches or exceeds the Powers (external and internal). It is analogous to a small motor that is called upon to bear a heavy burden for a long period of time. Eventually the motor shorts out and breaks down under the massive load. Under such a situation the individual must go through the process of "Load Shedding" or "Power Increasing" in order to correct the difficulty. If caught in time, and the Load and Power components are brought back into a relationship where there is a surplus of Power (margin), individuals are again prepared to meet life more successfully.

The Need for Margin

McClusky (1974, 1990) suggests that we need a favorable margin for at least three reasons. First, so that we can meet the unexpected emergencies or crises that are part of normal Adult Living. If we lack margin, if our powers are not greater than our loads, we simply cannot respond well to these crises. Second, we need margin to have a range of options or alternatives arranged before us in order to make wise life choices. If an individual perceives that his/her loads are so heavy that his/her back is pressed to the wall he/she may make poor choices that affect his/her life negatively. Finally, we need favorable margin to grow psychologically. A surplus of power tends to promote a more

independent, proactive risk-taker rather than one who is barely coping with life. In short, the great strategy of life is balancing the ratio of loads to power such that one can have a favorable margin to meet life creatively, independently, and responsively.

A Related Theoretical Construct

Applying the Theory of Margin to the practical affairs of adult living has been the concern of McClusky and others for a number of years. Many have recognized the intuitive appeal of the concept but have not known how to operationalize it. The basic question is how to make operational the load-power-margin elements into a pragmatic process whereby adults may understand and cope with their problems and crises.

A similar problem faced Kurt Lewin (1946) in the 1930's and 1940's as he tried to apply his theoretical constructs into utilitarian processes. A brief examination of Lewin's (1946, 1967) efforts and his ideas is useful because they provide insight on how to approach McClusky's (1974, 1990) theory in social psychology. Most of Lewin's (1946, 1967) attention was focused on human motivation both individually and in groups. His motivational concepts are concerned with the purposes that underlie behavior and the goals toward or away from which behavior is directed.

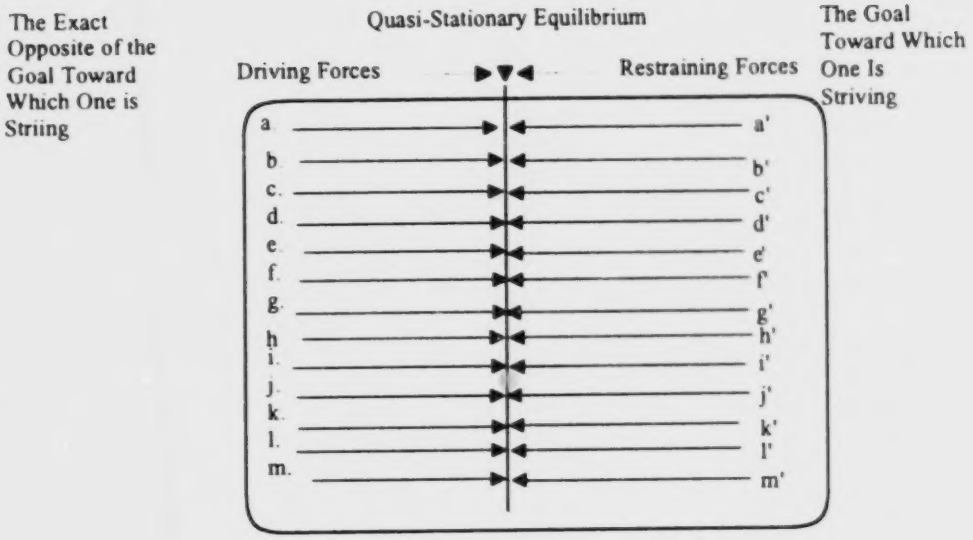
In numerous writings Lewin (1946, 1967) stressed his belief that people responded to their environments psychologically rather than logically. He understood behavior and especially motivated behavior to be a function of the psychological representation of one's world rather than the objective reality of the world itself. This psychological representation is a complex "field of forces" that includes the interaction of one's personality of dynamics, plus one's goals, levels of aspirations, needs, social relations, etc., with the perceived psycho-social atmosphere a psychological freedom one has over the environment.

Lewin (1946, 1967) thus theorized that each person (as well as groups of people and organizations) exists in a Life Space in which all of the foregoing "forces" operate. Using concepts drawn from topological geometry, he understood behavior to the product of the interplay of all these forces in the Life Space. The direction and relative strength of each force he portrayed by the geometry of vectors ("forces" or "influences"). Individuals learn as a result of the changes in two types of these vectors or forces: (1) there may be change in the cognitive or knowledge field of forces creating a new structure and new understanding of an issue, or (2) there may be a change in the internal needs or motivations of individuals. Because his "field theory" emphasized the immediate field of forces encompassing a person's problem, Lewin (1946, 1967) placed heavy emphasis on personal motivation. He believed that "success" was a stronger motivator than "rewards" and he emphasized the concepts of ego-involvement and levels of aspirations as two forces that affected one's success.

Learning implies a change in behavior, and change was described by the use of valences or the attractiveness or unattractiveness of one goal over another. Thus, valence was another force affecting personal motivation of persons striving for success in solving their problems. When their problems were solved a change in behavior or a change in the environment (the field of forces) that permits a change in behavior was enacted. Figure 2 portrays a generic "force field" and the various elements encompassed within it.

Figure 1. Graphic Conceptualization of The Theory of Margin

Figure 2. A GENERIC FORCE FIELD



For Lewin (1946, 1967), people exist in a Quasi-Stationary State of Equilibrium. This means that they are likely not to change because the forces restraining them from their goals or desired end are generally equal to the forces driving them toward their goal. That is, a person stabilizes his/her behavior (and will not change) when the forces pushing for change are equal to the forces resisting change. In this figure all of the arrow in the force field describe the relative strength of the forces. The longer the arrows the stronger the force. In most instances the force field will be composed of forces of varying length.

Lewin (1946, 1967) believed that planned change in the force field occurred by a three step procedure of unfreezing, moving, and refreezing at another level. This three step procedure is really a cyclical process and represents stages of change that may take sometime to bring about. During this three-stage cyclical process individuals may be expected to feel tensions and some anxiety as they strive to meet their goals.

Unfreezing: Unfreezing often occurs best when the following elements transpire (Dupree, 1976, pp. 37-8_37-9):

1. Normal routines are renewed so that one can take stock of the situation in a process of self-diagnosis.

2. Usual social supports are shifted to create a disequilibrium.

3. Discrepancies between intended and actual behavior become known through feedback in an open, supportive environment.

4. Anxiety is induced by these discrepancies to an extent that motivates an individual to consider change but not to the extent that it threatens or immobilizes.

5. Conditions are psychologically safe through reduction of threat and barriers to change.

6. Willingness to change is seen as rewarded in some way.

Moving Will Occur When:

1. People begin to feel safe under circumstances where the disequilibrium has produced sufficient motivation to change.

2. They can search for new information, alternative strategies or beliefs or new behavior patterns.

3. They are permitted to scan and identify new clues from their social environments.

4. They can identify with others whose behaviors appear appropriate to the desired change or who already have reached the desired goal.

Refreezing (Stabilizing) Will Occur When:

1. New feelings and behaviors are tried and reinforced.

2. Social support is provided to help integrate the newly acquired behaviors into a person's personality.

3. The forces that support the new change of condition are stable such that a reasonably long period of new equilibrium can occur thus solidifying the change.

Implementing Change.

In Lewinian (1969) thinking, change in a person's current equilibrium situation will occur only if the forces are modified so that the individual can move toward his/her goal and be restabilized at the new level where the driving and restraining forces are again equal. Change in the equilibrium may occur in one of three ways by: (1) Reducing or removing forces, (2) strengthening or adding forces; (3) changing the direction of the forces.

Any one of these three basic strategies may alter a person's current situation, but some secondary effects will differ according to the strategy used. For example, attempts to bring change by reducing or removing opposing forces generally results in a lower degree of tension. This may allow a greater movement toward the desired goal.

If a change in the equilibrium situation is accomplished only by strengthening or adding driving forces, the new level may be achieved by a relatively high degree of tension that may actually reduce effective functioning at the new goal level. This is because there is usually a corresponding increase in resistance to change when new forces are added.

Finally, one of the most efficient ways to obtain change is to change the direction of one or some of the forces. Typically, a change in the direction of a restraining force creates a double effect - it acts as a removal of the force in one direction, and the addition of a force in the opposite or driving direction.

Operationalizing The Theory of Margin

The obvious value of Lewin's work is that he created a conceptual framework for problem solving and for implementing planned change efforts around a number of individual, group, and organizational issues. The author believes that by adopting and modifying the Force Field Analysis approach, McClusky's (1974, 1990) Load-Power concept can be translated into a paper and pencil exercise that can meet a variety of adult learner needs. This adopted strategy has been field-tested with various persons in the helping professions. Clergy, counselors, and educators have helped clients work through the process steps and arrive at workable strategies for creating more favorable margin in their lives.

Figure 3 presents a generic Load-Power matrix for developing margin. This form is usually printed or drawn on an 8´ "X 11" piece of paper. It is important when helping, advising, or even counseling another adult in an HRD setting that the person him/herself fill out the form. This way they take ownership and responsibility for working through the process rather than having the HRD professional do it for them. There are a series of steps that must be taken to complete the problem-solving approach for achieving margin. Using an 8 x 11-1/2" piece of paper these steps should be followed:

Step 1. The first step is to identify the problem or issue causing a person such difficulty that they have little or no "margin" in their current situation. Several criteria are important for selecting this problem. (1) The problem or issue must be something the person really cares about. That is, there must be a strong psychological commitment to achieving a favorable margin in this area of their life. (2) The problem or issue must be something in which they are personally involved rather than only being spectators to a situation. (3) The person must really have the possibility for influencing the situation to create a greater margin.

The problem statement should be written up under the "margin" title. The problem should be phrased specifically and in terms of the "ideal" situation. That is, write it as the person would like to have the situation in the future. For example, an adult might write: "I wish to have 2 nights a week to attend classes at XYZ University." Another example might be "to learn to cope with my teen-ager's mood swings."

Step 2. Identify, and list all the important forces of the problem in the matrix. Because most problem areas can be perceived in terms of the forces that push toward improvement and the forces that resist improvement of the problem it is essential to get these out in the open. All the perceived loads (both externally and internally perceived psychological forces) that exist and appear to cause serious concern are to be written in the matrix. It will be remembered from earlier in the discussion that psychological or subjective perception is an intervening variable in a situation. So, for example, the lack of money to do something might be identified and listed under external load. However, the severity of a situation might be such that a person in their sleep is deeply concerned about the lack of money to do something. Hence, one can now say that the force that was external has now been internalized and therefore also must be listed within the internal load portion of the matrix.

Similarly, all the perceived powers (both externally and internally perceived psychological forces) that appear to facilitate a driving movement toward the desired goal are to be written in the matrix. Again, it is possible that an external power may also be perceived as an internal power. For example, one might be tremendously skilled at doing his/her job well. This external power can lead to a strong sense of personal self-confidence such that one's sense of self worth simply exudes forth in the attack of a problem. Hence, that which was external is now an internal power force.

In one sense, this second step might be labeled the "catharsis principle." That is, the identifying and analysis aspects of this step is an "emptying out" process so one can really see what is causing his/her problem. Further, this step has the advantage of seeing the 'positive' power forces in a problem rather than only seeing and dwelling on the negative aspects of a situation.

Step 3. Rank-order all the forces in the entire matrix in terms of the importance each has toward achieving the desired goal thereby creating a favorable margin. Assign a #1 to the force that, if it could be added to, reduced, or eliminated would yield the greatest movement toward a favorable margin. Assign a #1 to the next force that would yield the greatest movement toward a favorable margin. In like manner, all the forces are to be ranked and assigned a numerical scale in terms of how much movement each would yield toward the margin.

It is important to help persons using this process to examine both sides of the matrix as they do the ranking step. Too often they focus attention on only the "load side" and forget the power side of the matrix. It is important to help them realize that some of the driving forces on the power side must be retained, increased, or even doubled in force in order to keep moving toward the goal. Thus the ranking process will probably go from

"side-to-side" as each force is examined to determine how significant it is in moving to a more favorable margin.

This step might be termed the "divide and conquer" principle. Most persons when they are caught up in the emotions of a problem situation tend to see each force having equal significance and importance in the issue. Actually, in problem-solving, experience teaches that only a few major issues are the ones that will yield the greatest movement toward the goal. The remaining lower rank ordered issues are often resolved when the top-ranked forces are dealt with. Thus, in completing this step the adult is now able to see his/her problem in a prioritized fashion so that energy may be focused on the most pressing forces.

Step 4. Each of the rank-ordered forces are again examined. Now each force is to be assigned a letter "H" "M" or "E" depending on how "hard" "medium" or "easy" it will be to induce change in that force. This step allows the problem-solver another insight into the nature of the problem. For example, does the top-ranked force (#1) really lie within the influence of the person to change? If it does, that force might be rated with either an "M" (medium) or "E" (easy) letter. However, if the person has no or very little control over the force it probably should be rated with an "H" (hard).

When this step is completed the problem-solver now has before him/her a prioritized and rated picture of those forces that are really important and their degree of difficulty in achieving the desired goal and margin.

Step 5. Take the top five rank-ordered forces (the ones, which, if they can be added to, controlled, reduced, or eliminated would yield the greatest movement toward the goal and margin) and develop no less than three strategies for changing each force. Here the process of "brainstorming" is helpful. Identify some possible action strategies for each force that might be able to expand its strength, reduce its strength or eliminate it altogether. At this point all ideas should be listed regardless of how ineffective or impractical they seem to be. Later the problem-solver will decide which ones are the most appropriate.

The reason a minimum of three strategies is selected goes back to McClusky's (1974, 1990) rationale for margin. It was said that a favorable margin is required so one can have a range of options in order to make wise choices. Too often problem-solvers think of only one or two strategies and then immediately try to implement these,. If one only has two strategies to choose from one is in an "either-or dilemma." It is as if one were at a fork in the road on a journey to a strange town. Either one of the roads could lead to disaster. By generating multi-strategies many creative approaches are presented thus promoting a larger range of options from which to choose.

Step 6. The final step is to choose and implement the best single strategy identified for each of the five top forces. This now yields five practical strategies people can employ to work on their problem or crises.

By having five different strategies to employ the problem-solver now moves on the offensive. A greater possibility of a favorable margin now exists because there are multi-approaches to solving the problem rather than a single solitary approach. Under duress many problem-solvers are blind to perceiving more than one way to achieve success over the crises. Hence, the logic of applying a force-field strategy to creating favorable margin is that it takes a highly emotional issue and reduces it to a more objective and logical procedure while still recognizing and dealing with the sensitive subjective psychological dynamics inherent in the problem.

One word of caution is necessary in using this strategy. Too often people having a problem want to make short cuts in the procedure. There is a tendency, once steps 1, 2, and part of 3 are completed, to jump to seeing an apparent "answer" or solution to their

problem. It is necessary to help people work through six steps before they choose their various strategies. Most often a continuation of the procedures shows that their early perceptions were faulty or at best incomplete strategies for obtaining the greatest amount of movement toward their goal.

Summary and Conclusion

This paper explored and explicated Howard McClusky's (1974, 1990) Theory of Margin construct. In order to operationalize this theory, a review of Lewin's (1946, 1969) Field Theory of Motivated behavior revealed that his Force Field analysis strategy for planned social change could be adopted. The author modified this strategy to operationalize the power-load-margin elements into a paper and pencil problem-solving procedure.

This procedure has been field-tested in graduate education classes, and with persons in a variety of helping professions. The author now believes that this procedure can be used effectively by professional teachers, counselors, trainers or others in the helping and care-giving professions. It now gives them a paper and pencil device that operationalizes McClusky's very useful ideas to help adults manage stress and crises more effectively by developing and implementing specific change strategies that create favorable margin in their lives.

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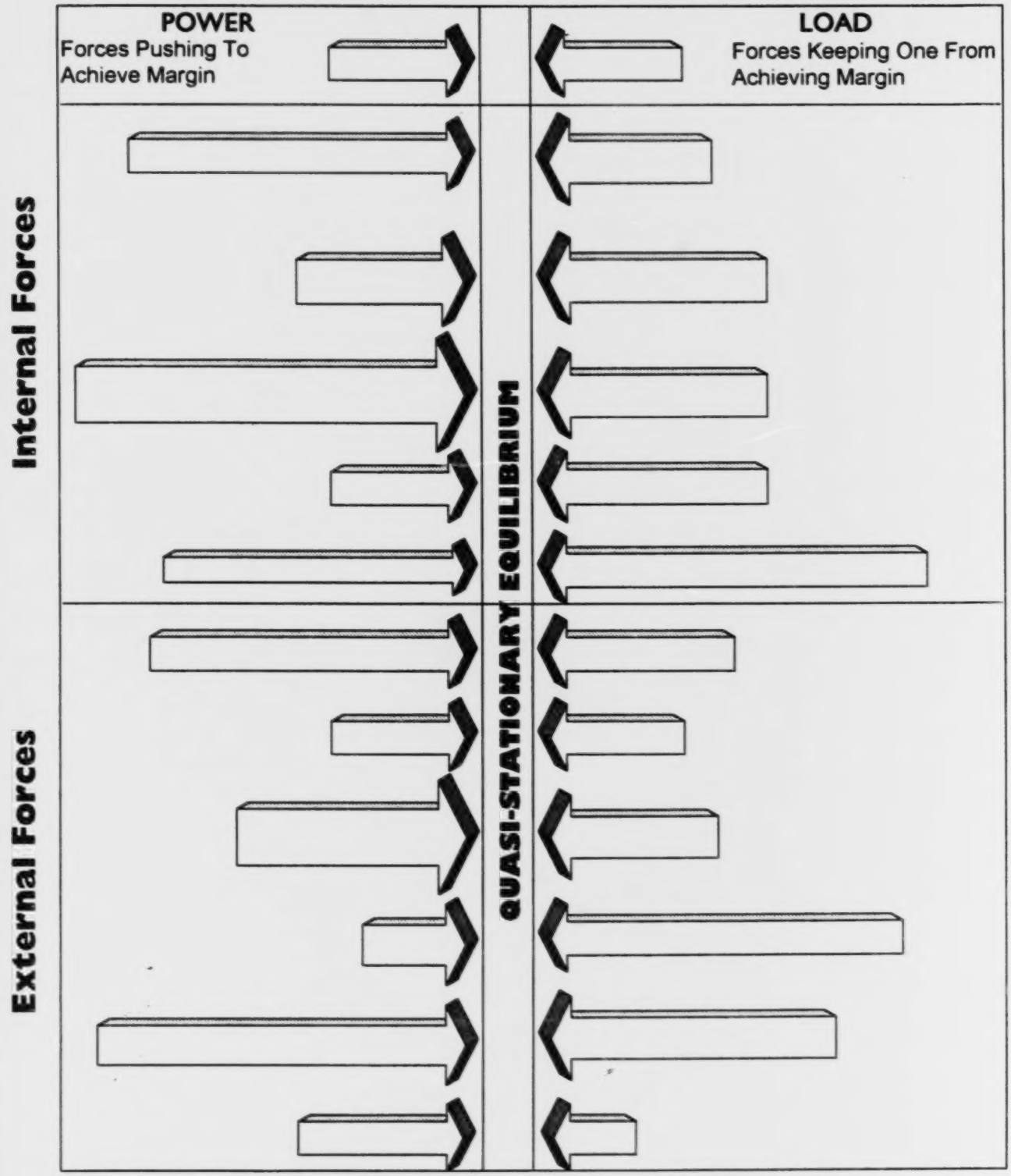
Figure 3. A Generic Load-Power Matrix For Developing Margin



NOTE: Width and Length of Arrows indicate the ***relative*** strength and duration of the force

The Establishment and Adaptation of an Effective Organizational Model for a Career Development and Placement Program For Student-Athletes

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In today's economy, the skepticism surrounding the employment opportunities for future college graduates is astounding. For the student-athlete, this uncertainty can be compounded by a lack of career focus and aspirations, external to the athletic realm in which he or she competes. The rigors of maintaining an active athletic career while striving to achieve academic superiority leaves little time for career exploration and development. Many student-athletes do not perceive a career as anything other than participation in professional sports following the completion of his or her intercollegiate career. These aspirations are decimated by the number of those actually achieving this status. The resulting factor is a student-athlete whose entire collegiate career centered on athletic development rather than academic and career development. This is an occurrence of which the perpetually evolving job market has no commiseration.

In order to facilitate the career development and placement of the student-athletes entering the workforce, the athlete's sponsoring organization must exert an assumed social responsibility to the career development of the athlete. In doing so, the establishment of a career placement and development program is vital to the student-athlete's overall enrichment process. The institutionalization of a career development and placement program within the department of athletics will provide student-athletes with a vehicle for pursuing and developing career interests and aspirations.

During the next twenty years, career development opportunities and programs will be affected by technological, organizational and individual changes (Hall 1991). To be successful in a career which will be shaped by these changes, the student-athlete must quickly develop a broad knowledge base in his or her area of interest. The primary caveat that will be experienced by future college graduates is that of new technology. Technological change is coinciding with changes in social values. New job market entrants are seeking positions that provide more opportunities for development, autonomy, flexibility and meaningful work experiences. For the graduating student-athlete, these changes will dictate that all efforts to prepare the individual must be taken by the athletic department to ensure he or she is competitive upon entering the job market. In doing so, the structure and style of the athletic department must also develop in order to implement technological advances in ways that are appropriate to changing job demands (Hall 1991).

In the twenty-first century, additional demands will be placed on an individual's competency for interacting on a team basis with fellow workers. This individual must be able to apply skills and experiences to new possibilities in a way that is innovative and adds value to the groups overall productivity (Hall 1991). This will require finding, building and combining know-how in flexible, effective ways. Development will include working as part of a team, learning new skills so as to be able to switch functions with members of the team, receiving frequent and prompt feedback, being rewarded for one's contribution to the team and sharing rewards based on the outputs of the team (Hall 1991).

Flexibility is key. Individuals must be able to adopt different roles, move from group to group, establish broad interpersonal and technical skills, be innovative in dealing with ambiguity and know when to act independently and when to act cooperatively. For the student-athlete, the possession and exhibition of skills such as these are the postulate upon which his or her athletic career is founded. Therefore, the incorporation of these skills with effective career exploration and development will provide the student-athlete with a distinct advantage over the non-student-athlete competing for a position within the same career domain.

However, before a career development program can be established, the career development spectrum of the organization must be identified and defined. Upon the establishment of the career development spectrum, a conceptual model for career development and implementation must be instituted. The models best suited for the facilitation of these tasks are provided by Doug T. Hall in his book Career Development in Organizations (1991). Due to the universal nature of the models, they are easily adapted to the organizational setting of a department of intercollegiate athletics.

Initially, according to Hall, the two most important facets of the career development process are the individual and the organization (Hall 1991). The first element is founded upon the individual student-athlete who is attempting to pursue a field of study that will be personally satisfying and productive. The second relates to the activities of the organization or in this case, the athletic department in its efforts to effectively select, assess, assign and develop the student-athlete to provide qualified and skillful individuals for meeting the demands of the job market. The individual level of approach is referred to as the career planning while the organizational level approach is termed career development (Hall 1991).

Career planning is considered to be the deliberate process of (1) becoming of self, opportunities, constraints, choices and consequences (2) identifying career related goals and (3) programming work, education and related developmental experiences to provide the direction, timing and sequence of steps to attain a specific career goal (Hall 1991).

Career development is an ongoing process for preparing, implementing and monitoring career plans undertaken by the individual alone or in concert with the organizations career system (Storey 1976). In turn, career planning consists of those activities in which individuals must engage in order to make informed choices as to occupation, organization, job assignment and self-development. This includes such activities as self assessment, the evaluation of available career opportunities and the preparation of a career strategy with an implementation plan (Hall 1991). Career management refers to specific human resource activities such as career counseling, training and education that are designed to help match employee interests and capabilities with job market opportunities (Hall 1991). According to Thomas Gutheridge (Hall 1991), a balanced approach to organizational career development requires the use of both these activities. The two facets complement and reinforce each other quite well. One can think of these two activities as representing the end points of a spectrum of career development. At the extreme career planning end of the spectrum are individual activities such as self-directed career workshops and tapes. The provision of these resource materials by the athletic career development and placement program will afford the student-athlete the opportunity to proceed at a self-inspired pace which ensures an abundance of information and high control. However, little of this information is communicated to the organization, which has less control over career planning (Hall 1991).

At the opposite end of the spectrum is the organizational talent inventories. These inventories will allow the athletic department the opportunity to assess the skills acquired by the student-athlete via intercollegiate athletics and how these talents are applicable to the

current job market. The adversity associated with this end of the spectrum is the lack of control and information experienced by the individual (Hall 1991). The ideal career development activities for the facilitation of the career needs of the student-athlete are those which lie in the middle of the spectrum (Hall 1991). Human Resource Management and Development: A Conceptual Model The theoretical model best suited for the establishment of a career development and placement program which will satisfy the parameters of the career development spectrum within an athletic department is Thomas Gutteridge's Human Resource Management Conceptual Model. This model augments the concept that human resource management and development are proactive, strategic and integrative approaches to career exploration and formation.

The Gutheridge model is comprised of four components or subsystems of which are influenced by the internal and external environments of the organization. The success of the model is founded upon its ability to maximize the organizational and individual goals which are subject to the constraints imposed by each one on the other (Hall 1991).

The first component of the model is that of organizational design. This subsystem is concerned with such issues as appropriate organizational structure, desired reporting relationships and functional responsibilities. The second component is the control evaluation phase which is necessary so that corrective action can be taken as needed when the results accomplished deviate from the planned objectives. These two components provide the premise which led to the development of the third component of career development which is depicted by the internal career development model by Walter Storey of the American Society for Training and Development.

Storey explains that within an organizational context, career development represents the outcomes created by the integration of individual career-planning activities with institutional career management processes (Hall 1991). These outcomes may be described in individual terms, such as better self-understanding and the identification of desired goals, as well as in terms of organizational results such as better communication of career opportunities (Hall 1991).

The final component of the Gutheridge model is human resource planning which when applied to the organizational setting of an athletic department is somewhat inconsistent with Gutheridge's definition. Gutheridge states the objective of human resource planning is to enable organizations to anticipate their future internal human resource needs by forecasting the expected demand for labor and identifying the difference between what is needed and what is available (Hall 1991). Within the athletic department, the same principles can be incorporated into the development of the student-athlete. However, the focus of the planning efforts should be redirected from the internal needs of the organization to the overall needs of the labor market. The remainder of the human resource planning component is congruous with the organizational objective for founding a career development and placement program for student-athletes. The outputs of the human resource forecasting are used to formulate individual action plans necessary for the fulfillment of the net human resources requirements of the evolving job market (Hall 1991).

Implementing Career Decisions: Linking Career Planning and Career Development

Upon the successful establishment of the career development and placement program via Gutterdige's Human Resource Management Conceptual model, the implementation and integration of the model into the organization must be initiated. The selection of an effective method for implementing the career development and placement program is crucial to the overall success of the program. The process must focus on mobility by stressing the placement process which is a central factor in career management (Hall 1991). For assisting in the implementation of a career development and placement program in the athletic department setting, the Morrison and Holzbach Career Management Process model provides an excellent medium.

The first step is assessing the career context. The context represents basic prerequisites without which career development becomes and "uphill battle." At the individual level, the person must have motivation for career exploration, which initiates the process of career development (Hall 1991). The initial concerns of the athletic department counselors are to assess the motivational levels of the student-athlete towards career development. If the student-athlete is not intrinsically motivated to seek information about career development, the process ceases. To instil in the student-athlete the motivation necessary for initiating career development inquiries, the counselor must solicit the student-athlete in a manner that he or she does not perceive as ominous. For example, informal research has shown that Freshman student-athletes participating in football initially perceive themselves as future members of the National Football League. For a career counselor to encourage this athlete to deviate from his aspiration shortly after beginning college, could result in an adverse affect on his athletic performance. However, due to a lack of professional women's athletic teams, to immediately begin counseling a female freshman student-athlete on career development would allow that person to gain an instantaneous advantage over her male peers.

The second step is information seeking. Information about the individual must be matched with information about career opportunities. Information about the person can be provided through self-assessment(of one's values, skills interests, experience, and other attributes) and through external assessment(performance appraisals, formal assignment records) (Hall 1991). The role of the athletic department career counselor is fortified by the necessity to assist the student athlete in the self-assessment process and by providing feedback on performance, potential and past assignments. Career counseling or advice provided by the athletic counselor can also be an important adjunct to an information system, by helping the student-athlete process the information and relate it to his or her own personal values, interests, skills and experience (Hall 1991).

Once the information gathering process has been completed, the third step of the Morrison and Holzbach model should be undertaken. This step consists of the individual's establishment of realistic goals for career development (Hall 1991). At the individual level, this requires the student-athlete to first think through his or her life goals, a process that probably will be aided by self-assessment processes. At the organizational level, in order for the athletic career counselor to assist the student-athlete in setting realistic career goals, he or she must have some information about future business objectives and areas of business that most likely will be growing and providing good opportunities in the future (Hall 1991). The forecasting of staffing needs is a viable means of assessing the needs of the labor market.

Upon the solidification of the individual's career goals, the specific plans for pursuing these goals must be developed. At the individual level, the student-athlete must utilize his or her skills of strategic analysis acquired through athletics for the development of these plans.

The fifth step in career management is helping the individual implement the career plan. It is particularly important to provide the student-athlete with problem-solving and coping skills, which are instrumental in overcoming the inevitable difficulties that arise as one works on a career plan (Hall 1991).

The final step in the career development model is performance. Once the individual has established his or her desired course for achieving career objectives, performance of these objectives must be the motivating force. Through good performance, feedback can trigger further cycles in the career growth process (Hall 1991).

Through the implementation of the Morrison and Holzbach model, the career development and placement program will be firmly entrenched within the organizational context of the athletic department. Upon this, the program's emphasis must shift from the establishment of the theory base to the operational aspects of the program.

An Operational Perspective Of a Career Development and Placement Program

The operational perspective of a career development and placement program is initiated by the organization in accordance with Gutteridge's Conceptual model with the intricacies of the program implemented through the Morrison and Holzbach model. The Texas A&M University Intercollegiate Career Services Program, which serves as the career development and placement center for A&M's student-athletes functions as the operational model to which the theoretical models are applied.

The first component of the Gutteridge model is concerned with the organizational structure and communication links between the department and the career development and placement program. At Texas A&M, the Department of Intercollegiate Athletics has established the Career Services Program under the division of Academic Services. Because of its strategic location and alliance with the academic division, the program is able to benefit from the divisions informational network both internal and external of the university setting. The program also profits from the division's resources such as computing and office facilities. This allows the program to link effectively with the department's computing network and eliminate breakdowns in communication between the managerial levels. The lines through which information is reported and feedback is received is relatively the same as any other organization. The career counselors who serve as the equivalent of line managers, report directly to the program coordinator who is in communication with the assistant athletic director for academic affairs who oversees the program's operation. However, these levels of responsibility shift as the counselors serve as the program's representatives to the external environment.

The second subsystem of the model focuses on the control and evaluation of the program and its objectives. The guidelines for this phase of the A&M program are determined by the objectives established through the employment of group think techniques by the program's counselors, coordinator and external organizations such as the Association of Former Students and the Letterman's Association. The progress of the student-athlete is measured against these standards and corrective action is taken when deemed necessary by the career counselors.

The third phase of Gutteridge's model consists of the Walter Storey Internal Career Development model. By integrating individual career planning activities with the institutional processes of the organization, the counselors are in a better position to serve the needs of the student-athlete. The application of this model is fulfilled by the counselors at A&M in an innovative manner. The development of the Career Map Handbook, Parts I & II has allowed the student-athlete to obtain information and worksheets which assess his or her career interests in relation to job market expectations and opportunities. The handbooks also provide invaluable information on the organization and implementation of a successful job search.

The final subsystem of the model centers around the organizations ability to forecast future job demands. The accuracy of the job forecasts are paramount in influencing the student-athlete on his or her decisions of career interests. The counselors of the A&M program rely on the external network for acquiring this information. Surveys are conducted and interviews with local and regional executives are held in an effort to obtain the most accurate up-to-date information on the job market. The intent of the programs directors are to eventually link via computer network with several major economic forecasting agencies such as Standard and Poor. With the successful elaboration of these elements, the next phase is the implementation of the program using the Morrison and Holzbach Implementation model.

Due to the fact, the first aspect of the Morrison and Holzbach model centers on career context, the motivation level of the student-athlete to seek career guidance must be determined. Because the career development process must be implemented as soon as the freshman student-athlete arrives on campus, the career counselors provide an in-depth career development orientation for each incoming student-athlete. These orientation seminars allow the counselors to enlighten the student-athlete along with his or her family as to the opportunities and services available to the student-athlete during his or her academic and athletic career. In conducting these presentations, the counselors are able to plant the seeds of interest which can later prove to be motivational to the student-athlete and family. Another technique used to stimulate the motivational interests of the individuals targeted, is the career development presentations provided to prospective student-athlete during his or her official recruiting visit to the campus. By granting the individual the opportunity to see that his or her future ambitions are of interest to the university and that these aspirations will be carefully nurtured, can prove to be a decisive factor in the athletic departments campaign to acquire high quality individuals.

The second step of the implementation model is the seeking and gathering of information by the individual and organization. The crux of the entire program is founded upon the level and accuracy in which the individual's interests are assessed and coordinated with the information pertaining to the chosen career field. The A&M program incorporates several assessment techniques and programs in determining the career interests of the individual. The initial step consists of the accumulation of information through the Personal Data Questionnaire. This questionnaire is designed to explore the demographic composition of the student athlete shortly after arriving on campus. Following the completion of the data questionnaire, the personality and interests of the student-athlete are determined through the completion of the Myers-Briggs Personality Type Indicator and the Strong-Campbell Interest Inventory. Due to the extreme time requirements associated with the application of these assessment devices, their administration is scheduled to encompass the student-athlete's entire first semester. A barrage of additional assessment tests such as the Brain Lateralization test, the Brain Dominance and Thinking Styles Inventory and the Bolle's Skills Inventory are available to further determine the individual's interests and

abilities. As the career counselors gain an insight as to the student-athlete's general interests, the advanced computer software package of SIGI-PLUS is enlisted to assist the individual in the further exploration of his or her career ambitions. This package is designed to allow the student athlete to compare his or her values, interests and skills with the particular career of interest.

Because many student-athletes enter college with few or no career ambitions, they are relegated to study basic core courses such as English, math and history their first year of school. These courses provide a solid foundation upon which to build a through knowledge base. However, many schools do not have programs that offer a degree in basic studies. Texas A&M is one such school. After 60 credit hours, the individual must choose a major course of study. This phenomenon is particularly attributable to the student-athletes of A&M. As a result, each student-athlete is forced to choose a major of which he or she is neither suited nor enjoys. The benefit of the Career Services Program to the first year student-athlete is the potential for the elimination of the uncertainty associated with deciding a chosen field of study.

In continuance with the Morrison and Holzbach model, the next stage of implementation is the establishment of realistic goals for career development by the individual. The establishment of these goals can prove to be rather simple for the individual, especially following the completion of the interest inventories. However, this task can prove challenging to the counselors. The emphasis of this stage is placed upon the counselors' ability to gather accurate data on the future business objectives and areas of business that most likely will be growing and providing good job opportunities in the near future. In collecting the relevant information, the counselors of the A&M program have chosen to enlist the aid of various media pertaining to the changing job market. The primary media, however, is the utilization of networking opportunities through The Texas A&M Association of Former Students, The A&M Letterman's Association and the booster organization, The 12th Man Foundation. These sources have provided a wealth of information on the volatile conditions of the job market as well as an alternate source of funding. The A&M Career Services also conducts a Career Shadowing program which allows the student-athlete to select one or more professionals within the working community that share similar career interests. The student-athlete becomes the professional's "shadow" for a short period of time. Because a student-athlete rarely has the time to participate in his or her school's co-op or internship programs, this program allows them to see firsthand the work involved with jobs related to his or her field.

The next stage of the model relies heavily on the individual and his or her competence for invoking the knowledge, skills and abilities gained while participating in athletics. These attributes include conducting a critical analysis of the goals and interests he or she is pursuing. The career counselor's duty is to assist the student-athlete by interpreting the results of the analysis and assessing the value of these results in relation to the individual's career plan. The skills acquired through athletics such as teamwork are indications of the student athlete's ability to work with others.

The fifth step of the model requires the counselor to help the student-athlete implement his or her individual career plan. The effective implementation of the career plan is the primary aspect for assuring the individual's success in his or her chosen field. This phase in the career development process begins after the student-athlete has completed two years of study at which time the emphasis shifts from career development to career placement. The duties of the career counselor are to assist the individual in preparing for the career through skill enhancement. The counselors at A&M conduct skill-building workshops which consist of resume writing, job search strategies, business etiquette,

interviewing skills and networking. The premise to the workshops is that a polished resume and well-written correspondence can demonstrate an individual's competence and fitness for a particular job. Additional resources available for the implementation of the career plan include the Career Resources Library and the Career Fashion Show which is designed to educate students on job interview attire as well as styles for the workplace and job-related social functions.

The final stage in the implementation model is the performance of the career plan in an effort to achieve its objectives. The accomplishment of these goals will rely heavily on the individual student-athlete's motivational level for attainment. This aspect of the model brings the implementation of the program full circle back to the initial stage of career context in which the student athlete must be motivated to seek career interests. However, the time requirements for reaching the performance stage are extensive and the sunk cost to the student-athlete is great. The failure of the individual to seize the opportunities afforded him or her at this point in the process, can only serve as an indicator of the individual's work ethics. The counselors at A&M conduct follow-up interviews to assure that the student-athlete's progress towards his or her career objectives is accomplished.

In summary, the future ambitions of the student-athlete are highly impressionable, especially in the initial stage of his or her collegiate career. For these ambitions to mature into a fruitful career, steps must be taken by the organization to ensure that it nurtures all aspects of the individual's development. The establishment of a career development and placement program by a department of athletics on the basis of sound theory and organizational objectives will enhance the career opportunities of its athletes. This in turn will reaffirm the department's commitment to the personal growth and development of those who comprise the department's foundation. By enlisting the aid of the career development spectrum, Gutteridge's Human Resource Management Model and Morrison and Holzbach's Implementation Model the organization will demonstrate its ability to utilize the best resources available for the program's development. Finally, the department must access all available financial resources to guarantee the success of the program. Failure of the organization or athletic administration to commit all available resources could result in the programs demise and lost opportunities for the student-athlete and the department.

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A "New" Quality Tool for Leveraging Human Resources on Large and Complex Problems

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Introduction

This is a "how to" paper - how to more effectively facilitate human resources when you are confronted with solving large and complex problems. The paper describes the successful integration of two quality improvement techniques into a "new" quality tool, ProAID. It describes how this methodology was used to support the formation, maintenance, and success of a large study team. The case study reports how the methodology leverages the contribution of individual team members from different organizations into developing prioritized critical system requirements. These system-level requirements provided a synergistic solution to a large organization's communication process. The purpose of this paper is to introduce this methodology to you, to discuss lessons learned and opportunities for leveraging human resources, and to help your project teams succeed when confronted large system's-level problems.

Problem

Many American companies, government agencies, and universities are finding they have to do things differently to survive in today's marketplace and economy. Quality improvement and meeting customer requirements are edicts coming from everyone's lips. But, the problem we face is going beyond the cheerleading rhetoric and putting these mandates into action. To meet the changes in today's environment requires the understanding and application of proven management and process improvement tools. From this , the systems-level problem has two components: (1) how to most effectively combine the strengths of two proven quality tools, and (2) how to apply this "new" methodology to organization-level management problems.

This "new" quality tool is based on combining AT&T's Process Quality Management and Improvement (PQMI){1} methodologies with Quality Function Deployment (QFD){2} techniques for the analysis of a complex policy management issue. This case study illustrates how a large team (approximately 45 people) in the U.S. Department of Energy (DOE) used this methodology to improve a critical management communication processes.

This methodology provided the analysis framework for determining the action required to design a new directives system within the DOE.{3} The directive system was not working; it was broken by all performance measures. At the very least, the directives system had lost all credibility as an effective communication management and policy-making tool. Senior management had lost confidence in using the system and were routinely using other means to bypass it. Individuals in the field questioned the feasibility of the published guidelines because the instructions were often of questionable relevance, extremely expensive to implement, or took control away from the individuals who best understood the intricacies of field operations.

When an organization's communication process breaks down, the efficiency of the organization is seriously jeopardized and can result in substantial misuse of scarce human resources. People are no longer doing the right things right. In this instance, and typical to similar cases when communication fails, there was considerable waste, scrap, and

rework of human effort because of the inefficiencies in the current directives process. The communication process was perceived by most everyone as a one-way process, top-to-bottom. Because of the complex and varied operations across the department, the requirements passed down by this process often failed to fit the situation. In other words, field operations personnel didn't understand the senior management's requirements, and at the top levels, senior management didn't understand how best to ensure proper execution of the field operations.

Written instructions are routinely used by large organizations for communicating management's polices into the day-to-day operational guidelines and practices in the organization. The DOE has approximately 300 directives which are costly to develop and to implement across 180,000 employees and operations that are geographically dispersed throughout the U.S. These directives or management guidelines cover a wide spectrum of activities from the mundane administrative issues to those that are essential to the management and safe operation of critical activities. For example, there are instructions ranging from parking lot procedures and smoking policies to assessing environmental risks and operating limits of nuclear power plants.

Background

The methodology presented in this paper is based on the quality principles taught by Dr. W. Edwards Deming, the founder of the new economic and industrial era, and Dr. Yoji Akao, Japan's leading Quality Function Deployment (QFD) expert and teacher. Deming's 14 principles of quality management provide the overarching framework for total quality management programs. QFD is most frequently used to define customer requirements, identify and resolve conflicts between requirements, develop performance measures and prioritize areas for improvement opportunity. To understand the development of the "new " methodology and to appreciate its strength requires a general understanding of the two underlying methodologies: PQMI and QFD.

PQMI. Process Quality Management and Improvement (PQMI) is based on Dr. Deming's work at Florida Power and Light in the early 1980's. FPL successfully applied Deming's principles and was the first and only non-Japanese company to win the Deming Prize for Quality. AT&T studied FPL's quality program and developed their own version of the quality improvement process - PQMI.

PQMI is based on the premise that all work is part of a process. Deming's influence is strongly seen in the emphasis that the worker is motivated to do good work. Therefore, when poor quality products or services are produced, we should not blame the worker, but management should be held accountable. For management to be successful in a total quality environment, it must yield the authority and accountability for quality to the workers who are most knowledgeable about the process. This is the essence of PQMI. Let those individuals who best understand the process decide how best to improve the process.

The PQMI methodology is broken down into seven steps for investigating a process and deciding where process improvements should be made. The steps are:

1. Establish process management responsibilities. This step identifies both the process and someone who is most knowledgeable about the process. This process owner is also the individual that is accountable for the performance or process outputs, and is capable of making changes to the process.

2. Define the process. This includes identifying suppliers and process inputs, and identifying customers and process outputs. There are often several stakeholders with numerous interfaces involved in the process. A flowchart is often a useful means of understanding stakeholders responsibilities and graphically illustrating the relationships between activities.

3. Define and establish performance measures. This step requires a good understanding of how the process is satisfying customer requirements and internal business objectives. These measures are best developed through direct interview with the customer where possible.

4. Assess conformance to customer requirements. This is a gap analysis that compares process outputs (step 2) to customer requirements (step 3) and identifies potential problems in meeting customer requirements..

5. Investigate process to identify improvement opportunities. Once data is collected, the analysis turns to understanding how process problems have adversely affected customer satisfaction and turning these problems into opportunities for improvement.

6. Rank improvement opportunities and set objectives. After identifying improvement opportunities, the team needs to establish a priority for each improvement opportunity based on the impact to customer expectations.

7. Improve process quality. This is the implementation step which provides a structure for carrying out the corrective actions necessary to achieve process improvements.

Quality Function Deployment (QFD).

Quality Function Deployment is a systematic approach for planning and decision making that can be used throughout the product or service realization process. It is driven by customer needs and is characterized by the use of cross-functional teams and the application of graphical tools to aid and document decisions. The QFD team translates customer needs and requirements into appropriate company or technical requirements at each stage of the project. The methodology stresses understanding customer needs, focusing effort and resources on the most important customer needs, and communicating or deploying customer needs to all organizations involved in providing the product or service. The structure QFD approach consists of five essential steps:

1. Identify customer needs. Customer inputs are needed if the product or service is to be based on customer needs. Ideally, the "voice of the customer" is direct. If customer inputs are not directly available, the team will need to validate "assumed needs" for QFD to be truly effective. In QFD jargon, customer needs are sometimes referred to as the "Whats."

2. Rank the priority of customer needs. The customer focus is further emphasized by gathering and validating customer perceived priorities. It is important to recognize that if there are various customer groups, the team should maintain a connection between the need statements and priorities and the particular customer.

3. Identify performance characteristics or "customer satisfaction measures." This step focuses on the things or actions that the company or organization can do to satisfy the customer needs. These performance characteristics can, in general, be described as things that the organization can control, characteristics that are quantifiable or measurable, and characteristics that do not dictate solutions to the problem. In QFD jargon, performance characteristics are sometimes referred to as the "Hows."

4. Map the performance characteristics (i.e., customer satisfaction measures) to the customer needs. The team determines the relationships between the performance characteristics identified in Step 3 and the customer needs. A mapping matrix organizes large groups of information in order to graphically display the logical relationships or correlations between the "Whats" and "Hows" (i.e., House of Quality). As the team examines each cell of the matrix they also must decide on the importance or correlation strength of each relationship strength relative to every other - strong, medium, weak, or none.

5. Identify the most important performance characteristics. The team determines the value or importance of each of the performance characteristics in addressing or satisfying customer needs. This importance is determined by combining the customer priority for a need with the relationship between the customer need and the performance characteristic. The performance characteristics that are strongly related with high priority needs are the most "important."

After completing the above steps, the team must ask themselves: "Does this make sense?" This is a common sense or intuition based sanity check of the process that is extremely critical before going further. It also checks team member "buy in" before transitioning from the "problem analysis" phase to the "problem fixing" phase of a study

The "New" Quality Tool.

From comparing the two quality tools, it is obvious that there are overlaps and similarities between the PQMI and QFD. Additionally, from experience in applying the tools, it becomes clear that each tool has shortcomings and as well as strengths. These shortcomings are especially apparent when challenged with improving large complex systems level problems. Since neither tool alone provides a complete solution and both have contributing strengths, the answer becomes obvious: combine the two to develop a "new" robust quality tool that eliminates the overlap, minimizes the deficiencies and maximizes the strengths of each approach.

Approach - How to Apply the "New" Quality Tool

The "new" tool requires a name. Therefore, from its heritage, it takes the "process analysis " techniques from PQMI. It takes the voice of the customer and "improvement deployment" techniques for comprehending complex issues from QFD. Thus, with some liberty, the "new" tool is referred to as the Process Analysis and Improvement Deployment (ProAID) methodology.{4}

The ProAID methodology is based on a four step process: 1. System definition, 2. Requirements analysis, 3. Developing systems-level critical requirements and system redesign, and 4. Implementing Improvements. The fours steps of this new "tool" is

supported by several subtasks.{5} Each step of the ProAID process is discussed in context of its application to the directives system project case study.

1. System Definition
   - identification of the system owner (PQMI)
   - description of the current system using a process flowchart (PQMI)
   - identification of the system users or customers (PQMI and QFD)

The system owner is the single individual that coordinates the multiple functions and activities of interrelated processes and is ultimately accountable for the effectiveness of the system if implemented as defined. The system (or process) owner must have the authority to change the system across organizational or functional boundaries with agreement from these organizations. In the directives project the system owner was a mid-level manager who was given control and accountability for the redesign of the directives system. In the directives project, three subsystem teams (development, coordination, implementation) were formed to define the existing directives system activities on a flowchart for each subprocess. The three subsystem flowcharts were integrated into one flowchart that described the entire directives system as it existed before any changes were made.

2. Requirements Analysis
   - identification of customers requirements (PQMI and QFD)
   - prioritization of customers requirements (QFD)
   - definition of performance or satisfaction measures for prioritized customer requirements (PQMI and QFD)
   - determination of relationships between all customer requirements and all performance measures (QFD)
   - assessment of current system's ability to meet customers requirements (PQMI and QFD)
   - identification of the most critical performance measures (QFD)
   - translation of most critical performance measures into the most critical system requirements.

A basic premise of the DOE Directives System Improvement Project was that the new system must meet the major requirements of the key users (customers) of the system to ensure acceptance of the system. There were five distinct customer groups of the directive system. They ranged from the Secretary of Energy and his senior staff to the field level staff and technicians. Each customer brought their parochial positions to the study. This caused real, as well as emotional conflicts with expectations of the new directives system. It was necessary that team members represent their organizations and therefore consensus building among the team members was an ongoing activity throughout the project. Consensus building required the involvement and active participation by all affected organizations with points of contact identified for each. It also required an aggressive communications plan to inform and enlist support from all levels of the user/customer organizations.

Each customer group developed their respective set of requirements. This resulted in a combined set of 182 customer driven requirements, needs, or expectations of the organization's directives system. Representatives from each of the five identified customer groups met independently to analyze and consolidate this larger set of requirements. Each of the five customer groups were tasked to limit their requirements to ten and to rank them in priority order. Thus, the 182 base requirements were reduced to 50 prioritized customer requirements. The 50 requirements were analyzed and the subsystem teams developed performance measures that allowed the system owner to know when the customer requirement is satisfied. This resulted in 33 specific performance measures of customer satisfaction.

Each of the performance characteristics and the associated performance measures were compared to all the prioritized customer requirements. This resulted in a 50 x 33 relationship matrix (i.e.., House of Quality). Relationships between requirements and performance characteristics were assessed as either strong, moderate, weak, or none. A numerical value was associated with the relationship strengths and resulted in a overall relative importance rating for each performance characteristic.

The performance characteristics with the highest importance ratings were candidates for becoming the most critical performance characteristics for a new directive system. These semi-quantitative results were subjected to the common sense test and scrutinized on the basis of "Do they make sense?" This resulted in the project team's consensus on the twenty most critical performance characteristics which were translated into the twenty most critical system requirements for the new directive system. The identification of systems-level requirements now provided a solid basis for changing and improving the directives system. Thus a new system, with these improvements implemented, provides the greatest opportunity of satisfying the greatest number of system customers.

3. Critical System Requirements and System Redesign
   - focus cross-functional Quality Action Teams (3-5 people) on the most critical system requirements (PQMI)
   - identify improvement opportunities and action plans (PQMI&QFD)
   - define the components of the new or improved system (PQMI)
   - design flow chart for the new system that connects critical system requirements (PQMI)
   - develop the new system based on solutions to critical system requirements. (PQMI)

Twenty quality action teams were formed to develop candidate improvement solutions (or fixes) to each of the 20 most critical system requirements. Since the teams worked independently and in parallel to develop options, they used the larger combined project team meetings to validate their proposed fixes and to resolve trade-offs and interfaces with other action teams. Each quality action team was tasked to develop a component level flowchart for their activity. The 20 component flowcharts were integrated into a single systems-level flowchart. The new system identified the sequence of events, decision points, and key process steps, along with the system requirements they satisfied. This flowchart provided a graphical illustration that assured a consistent end-to-end process for developing and coordinating, and implementing new directive requirements. Narrative descriptions and procedures were required to describe the specific process details for the operation of the new directives system.

At this point, it is critical that the results of the analytical, consensus-based, and customer-focused ProAID methodology are communicated to all system users. This is the highest risk element of the project: gaining consensus and acceptance outside of the project team from the larger organizational interest. This is when system users at all levels are afforded the opportunity to identify and accept the most critical system needs, the proposed solutions, and the new system requirements.

On the directives project, emphasis was placed on satisfying users and not just on concentrating on process requirements. It was accepted that it was not possible to develop and implement a directives system that met all the requirements of all the system customers. As a result, several system issues were too contentious and too difficult for easy agreement on a solution. They were deferred and will be addressed later as part of continuous improvement initiative. Considerable time was required to coordinate and resolve problems with the design for the new system, however, this effort was successful and the Directives Requirements Document was signed by the Chief Executive Officer.

4. Implementing Improvements
   - establish schedules for near and long-term actions (PQMI)
   - prototyping and testing solutions (PQMI)
   - reviewing all existing directives in agreement to the new system.

The last step of the ProAID methodology is implementing the approved system. The implementation process must now consider other organizational issues such as culture, resource availability, and management support. Implementing large systems changes and dealing with these three organizational issues can be extraordinarily difficult. These constraints will greatly affect developing realistic schedules and action plans. Most of these issues should have surfaced during the coordination process with the organization and should not be a surprise. However, it is now time for decision and management must be involved. These organizational issues are best be dealt with by identifying the decision criteria and ensuring that senior management participates, along with the system owner, in the analysis and development of a feasible the plan for implementing major systems-level changes. Communication of this plan throughout the organization is extremely important to let everyone know what is happening and their role in the implementation process.

Other Considerations for Systems-level Studies

Some suggestions on the organization and logistics are discussed to help minimize problems when using ProAID methodology on large systems-level improvement studies. Some of the more significant issues are the formation of the project team, developing the project plan, using consultants/facilitators, meeting coordination and support.

Project Team. The directives project team was chaired by a mid-level manager from the Office of Human Resource Management. This person should be a well respected risk-taker, willing to release considerable control to the project team, and willing to adopt recommendations out of the team. The permanent membership of the project team included representatives from several departmental elements and as well from all levels of the organization. This wide spectrum of participation provides a wide range of viewpoints and is very important when working large organizational problems. The project team was supported by three 15-person subsystem teams with each responsible for one of three phases of the directives process: development, coordination, and implementation. Since a large team is often necessary to address all aspects of a large organizational issue, it is important to break the team up if possible into subteams (less than 15 members per subteam) to make the group size more manageable and more productive.

Project Plan. A project plan should outline the study include the charter for the project, project leadership, team membership, expectations from senior management, scope of activities (i.e., what is within and outside of the teams authority), and identify deliverables. Large studies, because of the human resource requirements, are costly and require management's commitment to investing the effort. The plan should provide for periodic corporate management review and opportunities for study redirection, an organization communications plan, and a schedule for the approval of proposed actions by senior management. Periodic management review and communication feedback on progress to stakeholder organizations is critical to preventing surprises and obstacles in coordinating the final redesigned or new system.

The directives project plan divided the project into three phases: analysis of requirements, developing system corrective actions, and implementation. Eight monthly, 2-day team working sessions, were scheduled to complete the first two phases, analysis, and developing corrective actions for the directive system. The third phase, impleme ntation, was scheduled for completion within 12 months after phase sign off by the CEO for a total of 20 months devoted to the project.

Project Consultants/Facilitators. Because of the magnitude of the directives study, three consultants were required to support the various phases of the study and analysis. The consultants worked on behalf of the project leader and the three subsystem team leaders. The facilitators and leaders met prior to each exercise to review the process agenda, determine the objectives for the working sessions, and recommendations for resolving any teamwork problems. The facilitators' role was to get the evaluation and redesign completed in the most efficient manner. They were responsible for the process and where constantly collaborating on the team dynamics and the PAID methodology.

The importance of using outside consultants/ facilitators for large-complex issues cannot be overemphasized. As outsiders, they are responsible for moving the team through the ProAID methodology, and yet they are neutral on the content with no particular bias to the outcome of the new design for the system. They should be systems-level t hinkers and capable of pulling the many disconnected pieces together into a complete system. For example, the consultants' major concern on the directives project was the reconfiguration of the numerous component activities and subprocesses into a new and coherent systems design for the new directives system.

Meeting Coordination and Support. Meeting logistics were complicated by the large team size, coordinating the availability of team members, making travel arrangements, and consolidating the volumous data coming out of the meetings. The initial team was large because of many organizations with vested interest. The team size continued to grow as the momentum for the project was boosted by early successes and broad senior management support. The large team was both a problem and a benefit. Progress was often slow because of varied viewpoints and extended discussions, however, the large team also provided the necessary resources required to address the numerous quality action teams. Availability of team members for meetings was fully never resolved because of individual schedule conflicts. However, by scheduling project team meetings three to four months in advance, the project maximized attendance and continuity in membership.

The most cumbersome support task was collecting "rough draft" data outputs from the meetings and transforming the material into useful charts, matrices, glossaries, minutes, and project deliverables. This is an essential task that can be greatly assisted by dividing the work among all participants with a single project "assignment" coordinator responsible for pulling the information together. On large projects, this "assignment" coordinator function can be a full-time function for the duration of the study.

Leveraging Human Resources

ProAID is a disciplined approach for investigating complex systems level processes and placing priority on the "Voice of the Customer." It is based on the formation of cross-functional teams where team members each bring a different point of view to a problem. As such, it is a robust approach for developing teamwork, gathering and synthesizing enormous amounts of data, and identifying critical system deficiencies and greatest opportunities for improvements. Because all decision are based on consensus and a fair amount of discussion takes place, people feel that all their interests are addressed, not always to their satisfaction, but at least their opinions are heard. This communication at the functional interface between two or more functions or organizations is critical. As people see the larger picture, individual concerns may not be as critical and some rationalization takes place.

The greatest advantages of the ProAID methodology is leveraging of human resources. For example:

Communications tool. The four step methodology provides an analysis roadmap to team members. It breaks down large system-level problems into manageable phases and then logically addresses phase of the analysis in detail by the sequence of subtasks. The communication process is further supported by the use of graphical tools that capture the various activities, relationships, requirements, and priorities necessary to develop a set of systems level requirements. This approach helps reduce the ambiguity and increases the understanding of interrelationships when dealing with many complex and interacting variables of a large problem. The graphical presentations not only leverage internal team-communication process between team members, but is also beneficial when communicating to decision makers and individuals outside the team.

Handling large amounts of data. Teams can generate enormous amounts of data and without an effective means of capturing and handling this data, much effort will go to waste or become a major retrieval problem. The methodology provides a systematic means of handling and using this data to identify critical needs and performance characteristics. The data capture and storage process is supported by commercially available software. The software files can be manipulated if necessary and allows sensitivity analyses to be conducted by modifying either inputs, priorities, or relationship weights. These large data files are important in assisting the continuity in transitioning from meeting to meeting, particularly when the meeting participants are not always the same.

Increased Teamwork. The methodology helps large systems-level teams cooperate and communicate effectively. Since teams are made up of cross-organizational members who bring different perspectives to the problem. As always, these teams will go through the "storming" phase, however, this methodology may help leverage the team's ability to move more quickly out of "storming" into performing and making positive gains on system improvements. The methodology provides a logical sequence of efforts that provides the team a systematic focus on significant application of the team's resources.

Emphasis on the customer. In general customer requirements are vague, incomplete, and often conflicting. The methodology is beneficial in developing explicit and measurable definitions of customer requirements. By clarifying and validating requirements and priorities with the customers, a team also demonstrates to the customer that they are working their concerns for customer satisfaction. In so doing, the team leverages its credibility with the customer.

Resolving conflicts between requirements. Large systems studies often have multiple customers and customer requirements which may be in conflict with one another. The methodology accommodates each customer's prioritized set of requirements without bias. When all requirements are integrated through the relationships analysis, all customer requirements are given the priority assigned by the customer and the team does not have to directly decide which customer is most important. The methodology's relationship analysis and method of developing of the most important performance characteristics in a semi-quantitative manner avoids the subjective arguments over importance.

Summary

In summary, this case study presents the results of the application of a newly developed methodology for handling systems-level process improvement challenges presented by large and complex management problem. This quality tool breaks down barriers and leverages the talent of human resource in their quest for quality. The methodology is based on combining the best features of two quality tools: PQMI and QFD. The result is called Process Analysis and Improvement Deployment (ProAID). ProAID is a logical, customer focused, disciplined methodology that can be applied in a flexible, adaptive manner for the identification of critical system requirements. Once critical system requirements are identified, they are used as the basis for redesigning or developing a new systems-level solution to the complex problem. The methodology requires that the study team take chances with the four step process and in the application of the subtask under each step of the methodology. Systems-level problems typically present an overwhelming challenge when first assessed. However, the complexity of issues that are pervasive and run across all operations of a large organization can be dealt with effectively when broken down. This methodology provides a systematic approach to identifying sub-processes and looking at each in the context of satisfying customer performance on a limited number of critical system requirements.

FOOTNOTES**********

{1}Process Quality Management and Improvement, AT&T Bell Laboratories, 1987, Issues 1.1.

{2}Hauser, John R. and Clausing, Don. "The House of Quality." Harvard Business Review, May-June 1988.

{3}Directives may be known by other names, for example, corporate procedures, company regulations, operating instructions, or policy standards to name a few common labels.

{4}Note the word "quality" is not in the title of the ProAID methodology. Why? It is the author's contention that, rightfully or wrongfully, the word is overused, hackneyed, and people are "jaded" by the use of the word "quality." This is particularly the case at the lower levels of an organization where action speaks louder than words. The workers in an organization are motivated to do " quality" work and the use of the term in reference to their work processes may be perceived as blamimg.

{5}The parentheses identifies each step of the analysis task as originating as either a step from PQMI or a step from QFD.

The Relationship of Gilligan's Moral Orientation and Continuing Educators' Salaries

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Since the 1960, the gender gap in salaries has been studied extensively. Explained salary difference estimates range from 12 to 70 percent, depending on the number of variables included in the study; the unexplained part is attributable to discrimination (Pounder, D., 1985). Among women in higher education, explanations of lower salaries that have been studied and rejected include: less commitment to work and career (Bielby, D & Bielby, W. , 1984); less education and training (Pounder, D, 1988, April); women have less information about salary ranges (Martin, B, 1989); and less productivity, especially from married women in academia.

Differences in pay among women in higher education that have been accepted include: a combination of experience, education, and gender (Pounder, D. (1985, February); initial starting salary (Taylor, M., & Ilgen, D, 1981); different criteria use for evaluating women (Persell, C., 1983); and once a department is disadvantaged it remains so (Bergmann, B., 1985).

Another consideration explanation for differences in salary has been suggested in literature, but has not been studied -- moral orientation. Allusions to this difference were mentioned even before Gilligan explicated her care orientation.

The timeline of universities was described by Hochschild in 1983 as freezing women out (Persell, C., 1983). Hochschild stressed that the competition found in universities restrains women and the feminine values of cooperation, caring, and moral concern. She also observed that many women leave academia before reappointment and tenure decisions. This suggests to her that female attributes are less suited to success in academia than male attributes, which suit the academic role as it is currently defined (Rothblum, E., 1988).

The justice orientation was originally explicated by Kohlberg to explain moral development (Bergling, K., 1981). Though Kohlberg's theory originally gained wide acceptance, Gilligan criticized Kohlberg's theory from two perspectives: he studied only males and applied his studies to females, and women typically did not score higher than stage three on Kohlberg's stages (Gilligan, C., 1982). The theoretical basis Kohlberg used for selecting justice as the basic principle of moral development came from his interpretation of Plato's Republic (Kohlberg, L., 1974b). In the Republic, Plato has Socrates intellectualizing about justice -- a mental function associated with males.

Gilligan criticized Kohlberg for not including women in his study. Accordingly, she studied women and developed an explanation of women's development that led to the care orientation and its explication. Characteristics of each respective orientation are as follows:

> The justice orientation is concerned with rights, exercising justice, obeying rules, and upholding principles; logical and individualistic, this male voice advocated equality, reciprocity, autonomy and individuation.

"The other voice, more dominant in women than in men, speaks of caring for others, sensitivity to others, concern for others, and connectedness to others. It emphasizes responsibility to human beings over abstract principles and advocates avoiding hurt and violence, maintaining relationships and attachments even if self- sacrifice becomes necessary. In short, this female voice represents the 'interpersonal network' or care orientation (Muus, R., 1988)."

The distribution of males and females into the two orientations is gender related according to Pollack and Gilligan, but not sex determined (Pollack, S. & Gilligan, C., 1982). Sex determined means biologically male or female; gender related involves learned gender behaviors. From analyzing six separate studies Pollack and Gilligan found the following distributions:

Table 1. Distribution of Orientation by Gender.

CARE ORIENTATION

	Include	Prefer	Exclude
Females	92%	62%	8%
Males	62%	7%	38%

*Prefer is a subcategory of Include

JUSTICE ORIENTATION

	Include	Prefer	Exclude
Females	77%	38%	23%
Males	100%	93%	0%

Source: Pollack & Gilligan

Men and women have a different view of competitive success that is reflected in their moral orientations (Gilligan, C., 1982). Some successful and achieving women do not mention their academic and professional selves when describing themselves. Many women see their sense of self jeopardized by their professional activities. Many women experience conflict between achievement and care.

Males are disadvantaged in relationships by the justice orientation, while females may be disadvantaged in competitive circumstances by their moral orientation (Belenky, M., 1984). Concerning salaries, the salient point is that the care orientation, whether held by males or females may affect salaries downward.

The justice orientation -- the male world view -- has dominated literature and research in moral development, and has been used by many educators as their underlying educational philosophy. For example, Cooper (Cooper, M., 1989), finds that while the care orientation best reflects nursing practice, the justice orientation dominates nursing literature.

The code of ethics of social work -- another care-oriented profession-- is written in the male voice, Rhodes (Rhodes, M. 1985)., has noted. In social work, researchers and academics are typically males and practitioners females, Davis (Davis, L., 1985), has observed. She believes that male voice has dominated and suppressed the female and has led women to distrust their own voice. Stonewater (Stonewater, B., 1987), a career counselor, suggests that women limit their career options by exclusive use of the female voice.

Women's preference to work near their residence may be another manifestation of their care orientation (Semyonov, M. & Lewin-Epstein, N., 1991), Rothblum, has found that, beyond the geographic constraint, women fare less well than men when they do move (Delworth, U. & Seeman, D., 1984). Men go to a higher level in academia at twice the rate of women when moving. Women, because of this, often leave academia when dissatisfied -- men move. Rothblum believes that women often do not wish to sacrifice relationships for promotion. She believes they do not see pulling up stakes as worth the price for a promotion.

In one care-dominated profession -- social work -- a recent study found gender was not a predictor of salary among bachelor's program directors (Harper, K., 1991). Harper, in 1991, replicated a study she did in 1985 and found the gender gap, in preference of male directors, no longer was a predictor of salaries. She suggests several factors to explain this change: the Council on Social Work Education's policies, especially its policy on, affirmative action; networking, workshops and papers by female social workers; and settling equity disputes through litigation.

Women in academia did not have the same access to courts other women had to settle equity disputes until the last few years. Even though the work patterns that existed with women in academia in the 60s persisted into the 80s, this remained true (Weeks, A. & Wygan, D., 1990). Academic women remain in low paying jobs and the gap in earnings goes up as education levels go up. Women occupy lower academic ranks and nontenured positions in colleges than men; they are paid less than males; promoted more slowly; and receive tenure at lower rates -- just as they did in the 60s

Under Ronald Reagan's administration, it was felt that education should be free to discriminate in areas not receiving federal aid (Project on the Status and Education of Women, 1983). The courts, reflecting the administration's posture held that job-related skills could result in legitimate and lawful salary differences (Koch, J., 1982). This was not considered discriminatory under the Equal Pay Act since federal statutes did not forbid discrimination because of academic discipline (Bergmann, B., 1985). Part of the court's reasoning was the assumption that higher education functioned under a market economy. In economics, it is axiomatic that a market economy is unbiased. Courts did not recognize comparable worth claims using this reasoning. The assumption that pay is related to performance in free markets is unsupported by studies. Once disadvantaged, however, a department stays disadvantaged -- whatever the cause. Salaries, in higher education as elsewhere, are set not by market, but practice, practice that reflects convention and tradition.

Employers must now defend themselves to prove they would have made the same decision despite discrimination (Jaschik, S., 1989). Courts now analyze the merit of a candidate's qualifications if a university had granted tenure, but for discrimination (Brammer, J., Lallo, D., & Ney, S., 1991). The new court's reasoning balances a university's right to academic freedom against an employee's right to a job free of discrimination. Brammer predicts this opinion may lead to the breakdown of the traditional tenure-decision process.

Changing the court's reasoning is important, but its importance may be foreshadowed by the recent change in administration. The social equality gains of the 60s and 70s have slowly eroded, under recent administrations (Haberfeld, Y., & Shenhav, Y., 1990). This may be related to the lack of an anti-discrimination plank in the administration's agenda, reflecting a lack of concern for discrimination. The lack of concern may be reflected in fluctuations in measures of discrimination. In the 70s, the discrimination effect was reduced by 20.4 percent; during the 80's this slowed to 3.9 percent (DiPrete, T. & Grusky, D., 1990). Bureaucratic personnel policies helped equalize opportunities in the 70s, but federal agencies' were more impressive in their effects.

The effect of national policy can be seen in the results of the U. S. having no coherent national family and gender policy, while Scandinavian countries do (Rosenfeld, R. & Kallenberg, A., 1990). While the new administration is working to remedy this, the U. S. trails Northern Europe. The U. S. remains the only industrialized country without maternity leave; it continues to have the greatest inequities in gender-based pay; and it has the lowest representation of women in the national legislature of any Western country other than Greece -- and both countries take the moral high ground when speaking of democracy.

One academician has suggested a coherent gender policy in higher education to remedy the gender inequities in academia (Hensel, N., 1991). This is unquestionable needed, however, I believe the most productive efforts to remedy inequities in women's pay can be placed in two areas, each related to the other: First, the U. S. must have more women represented in the national legislature, as in Scandinavia. This does not obviate the need to have more women in local and state governmental bodies. Second, the U. S. must develop a comprehensive and coherent national family and gender policy. There have been recent attempts to pass a national family policy, but they have had only modest success. These changes must occur because if one among us is treated unjustly, we all are. We cannot afford to allow outdated, patriarchal, sexist traditions -- traditions that are often unexamined, deep-structured, elements of thinking -- to continue the waste of human talent that gender-biased discrimination allows.

It is important to note that unexamined, deep-structured thinking often occurs in a cultural and individual blind spot -- in both genders. We find it difficult to recognize even if we are looking for it, and even if we consciously try to eliminate it, it appears when we least expect it.

Words such as these are sometimes heard as fighting words -- I do not intend them as such. My intent is to propose opening dialogue, leading to mutual examination of our words and behavior. The history of discussion regarding men and women's issues is one of strike and counter- strike, with each side as intolerant and intractable as the other. An open dialogue addressing the difference between the world as it is and the world as we would like it to be is more open, honest, and potentially more productive. It is only through such a dialogue that we can approach to our potentials.

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Ensuring Quality Response to The Marketplace in Establishing a Professional Education Program

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Abstract

When Regis University made the decision to develop a Professional Education Program (designed to deliver credit and non-credit courses and programs on-site to business and industry) the decision carried with it two caveats--it must be market driven and it must satisfy the quality demands of the marketplace and the University.

Regis University, a Jesuit, Liberal Arts institution with a history of over 100 years in Colorado has, since 1978 been a major deliverer of adult degree completion programs, designed to satisfy the educational needs of working adults. Regis has developed a reputation for taking education to where the students are by placing campuses in the areas populated by business and industry concerns. The University has 11 campuses in Colorado and three in Wyoming. Three of the Colorado campuses are in the mountains in places such as Glenwood Springs, Steamboat Springs, and Breckenridge. The one area where Regis had not made a concerted effort to deliver education and training to where the students are located was on-site to business and industry.

The University had always concentrated its efforts on degree programs leading to a student graduating with a degree from the institution. The idea of offering a single course to a group of students or a non-credit "training program" was something the University had purposely avoided. We avoided doing this even when corporations who were supporting the University through tuition aid to their employees, who were our students, requested that we provide on-site courses to meet specific educational and training needs. The administration of the University was very reluctant to do anything that looked like "continuing education."

During the Spring of 1991 several of us in the School for Professional Studies (SPS houses the adult degree programs, both graduate and undergraduate) began talking about the need to respond in a more positive way to the requests we had received. We put together a proposal for the Dean of the School for Professional Studies suggesting that while the present adult degree granting program was very successful it was only meeting a part of the University's mission of taking educational opportunities to where the students are located. A number of corporations, Coors Brewing, US WEST, Samsonite, Storage Technology Corporation, Gates Rubber are headquartered in the Denver Metropolitan area. In addition, organizations such as Martin Marietta, IBM, Digital Equipment Company, Apple Computers, Hewlett-Packard, American Express, Safeway, ITT, etc., employ thousands of people in the Denver/Colorado Springs/Ft. Collins corridor. Many, if not all the organizations, we suggested were markets for on-site educational programs. The Dean agreed to take our proposal to the University administration. Somewhat to our surprise the administration agreed to our preliminary proposal so long as we kept always in mind the two caveats: (1) such programs must be market driven; (2) they must satisfy the quality demands of both the university and the marketplace. There was also a third, unwritten but well understood caveat--the program must be self-supporting. As our former president, Father David Clarke was quoted as saying in a Wall Street Journal article published in July, 1991, "We're not for profit, but we're not for loss either."

Before a program was considered, before a course was planned, before a staff was hired, before a piece of furniture was moved it was necessary to show the University that indeed a market for professional education (not continuing education) did exist. Only then could the program be said to be truly market driven. And only then would the University give formal approval to move ahead and formally approve a Professional Education Program.

We had no intentions of trying to emulate what most of the state universities and community colleges were doing, i.e., offering a broad array of either credit or non-credit courses to the general public and "hoping" people would respond. We would respond only to very clearly enunciated market needs.

A plan was developed to generate a market study. Corporations, both profit and non-profit, to be targeted in this market study were identified. The initial basis for including an organization in this study was the number of employees. The rationale: only those with a reasonably large number of employees, arbitrarily set at 200, could provide large enough numbers of students to make on-site delivery economically feasible.

Thirty organizations in the Greater Denver area and thirty in the Colorado Springs area were selected for this study. A formal market study questionnaire was developed.

Contact was made with either the organization's chief executive officer, the human resources manager, or the education/training manager to set an appointment for the market interview. We felt that these were the individuals within the organizations who would be most likely to be able to answer for the organization the questions to be covered during the interview. Each interview was scheduled for one hours duration. Following each interview a written report was developed. The written reports were collated and used as the basis for a proposal for formally establishing the Professional Education Program at Regis University.

A small committee composed of an Associate Dean, the Director of New Ventures, a corporate training person, and myself was formed to both direct the market study and to analyze the results. This group would ultimately be responsible for either preparing a proposal to go forward with the project and to table the idea.

The market study clearly showed the need for a market driven, quality based professional education program in the Denver, Colorado Springs, Ft. Collins corridor. Programs presently existing were not meeting the needs of business and industry, except in rather limited ways, if at all. The reputation Regis has within the business community for delivering quality and value based education, and for responding to the needs of the market place were seen by the majority of the businesses contacted as a welcome entry into the professional education arena. As one respondent stated, "This is the first time anyone ever asked what we wanted."

The University, as a result of the market study agreed to the formation of a Professional Education Program, staffed by a full time Director and a half-time secretary to begin formal operation on July 1, 1991. Our fiscal calendar is a July 1-June 30 calendar. I was given the Director's position. I had spent the two previous years as the Director of Faculty and Curriculum for the RECEP program within the School for Professional Studies. The RECEP program is an accelerated, graduate and undergraduate degree granting program. My background in both the business world; I am a former Training Director and Manager of Human Resources, and the academic world was a good fit for what we were planning for our Professional Education Program. My experience enabled me to talk to business people from their perspective not from an academic perspective. I understand the bottom line issues, the profit motive. I would submit many academics have not the faintest notion what the reality of those concepts are, except in some rather "textbook" sort of way.

From a base of zero revenue dollars on July 1, 1991 to a revenue projection for 1992-93 of almost $200,000.00 the Professional Education Program has shown itself capable of becoming a major player in the field. As of the writing of this paper it appears that we will exceed the revenue budget by ten to twenty thousand dollars. This is accomplished by one full-time Director who does all the marketing, selects faculty, evaluates faculty and courses, and occasionally teaches a course, and one, now, full-time secretary. To what do we attribute such success? We saw a need and we responded to that need.

We are now doing on-site programs at organizations such as Coors Brewery, Penrose Hospital, Storage TEK, IBM, AT&T, The Alert Centre, etc. The on-site programs we are doing range from an eight course Certificate in Management program that we are doing at Coors, all the courses are for University credit and will transfer into a degree program, to non-credit programs such as "Train the Trainer" workshops for organizations such as IBM and EG&G. We do only one program that I would consider a "public offering." This is a certificate program we call the Professional Trainer Series, designed for people in the training profession. This certificate program can also be taken for college credit. One of the nice surprises that has come of our efforts so far are the calls we are getting from organizations that we've never called on, that in many cases are too small to have fit our initial marketing efforts, who are interested in talking to us about our program.

How were we able to start a new program offering educational and training activities in a marketplace that some said was saturated by University and Community College continuing education programs, littered with the bones of consultants trying to sell their wares; in a market where corporations were cutting their training budgets and their training departments drastically, if not eliminating them altogether? I think it happened for one reason, and one reason only. It happened because of our willingness to listen to the market and to deliver to that market, market-driven, high-quality responses to the needs of the marketplace

Performance-Based Assessment of Software Skills Proficiency: A Demonstration of The Judd Tests

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Abstract

The differences between multiple-choice, simulated, and concurrent tests of software skills proficiency are discussed. For three basic human resource functions, the advantages of concurrent tests (i.e., those that use the actual application software) include true performance-based assessment, unconstrained response alternatives, and increased job-relatedness. The Judd Tests, a line of software skills proficiency tests, are described to illustrate the advantages of concurrent testing.

As a result of increasingly sophisticated technology in the workplace, selection and training of qualified computer users is a growing concern of human resource professionals. Central to this concern is the assessment of computer skills, or those skills necessary to successfully apply the features of hardware or software. Accurate assessment of these skills serves three basic human resource functions:

applicant screening (determination of what skills a prospective employee has acquired)

pre-training evaluation (or diagnosis of skills and prescription of appropriate training)

post-training certification (or assessment of training program effectiveness)

Virtually every job involving the use of a computer necessitates use of software. Software skills proficiency is typically assessed in one of three ways:

multiple-choice tests, which provide on-screen multiple-choice assessment

simulations, which evaluate task performance in a simulation of software

concurrent tests, which evaluate task performance in the actual software application

In methodological terms, multiple-choice tests are knowledge-based assessments, while simulations and concurrent tests are performance-based. That is, multiple-choice tests require examinees to articulate knowledge about performance, while simulations and concurrent tests require examinees to actually perform.

While simulations and concurrent tests are both performance-based, they differ in the degree to which features of the software application are incorporated. Simulations support some software functions, but do not access the actual application; thus, important functions normally available to the user (e.g., on-line help) may not be supported. Concurrent tests, on the other hand, evaluate tasks in the actual software application, enabling all functions normally available. Simulations and concurrent tests are further differentiated by the response alternatives available to examinees. In simulations, it is generally the case that two or three "paths" to completion are available and that any deviation from those paths is unacceptable. Because they use the actual software application, concurrent tests do not constrain examinee responses; the examinee may investigate incorrect (and correct) menu choices, make and correct mistakes, and use the on-line help utility of the application without being penalized. The net effect of using a

concurrent test is that of having an observer present when the examinee is being tested, then having the observer evaluate the results of examinee responses. In automated testing, that observer is a computer program.

In terms of job-relatedness, concurrent tests are most defensible from a content validity perspective. This is the case because concurrent tests are work samples, in which the major tasks required in a job (e.g., use of a software application) are assembled into a coherent series of test items with standard instructions and scoring procedures. In such tests, the goal is to assess the ability to complete test items, not the level of performance exhibited when completing them. Because they provide a representative sample of behaviors required to successfully use a software application, concurrent tests are virtually identical to observable work behaviors.

To summarize, concurrent software skills tests have a number of advantages over both multiplechoice tests and simulations: 1) concurrent tests are performance-based, asking examinees to perform instead of articulate about performance, 2) concurrent tests allow examinees to use all functions normally available in the software application, 3) concurrent tests do not constrain examinees to certain "paths" of responding, and 4) concurrent tests are defensibly job-related for positions requiring use of computer software.

The Judd Tests are a recently developed battery of concurrent software skills tests. The Judd Test battery currently offers assessment in five DOS-platform applications (DOS, WordPerfect, Lotus 1-2-3, Paradox, and Microsoft Word), with additional tests (including Windows versions) available in the near future. While each of The Judd Tests supports a single software application, all of the tests share a number of features that make them valuable tools for the human resources professional. To illustrate these features, consider The Judd Test for WordPerfect:

1. Test customization: The Configuration Program allows test administrators to customize the test. The Configuration screen displays each item comprising the test; items contain one or more tasks, each representative of the feature being assessed by the item. The test administrator selects those items which will be administered during the testing session, thus evaluating only those skills which are relevant to the specific job in question. The Configuration Program also allows the test administrator to set-up a number of other test conditions, including time limits, respondent identification, and reporting options.
2. Complete on-screen administration: As concurrent assessments, The Judd Tests "run in the background" of the actual software application, allowing the examinee access to all functions normally available when using the software. When the test is initiated, the examinee will note that the software application is initiated. All subsequent instructions to the examinee, practice items, and test items appear on-screen. Clear, concise instructions guide the examinee through each task.
3. Realistic work-related assessment: The items comprising The Judd Tests are tasks that are typically found in the work environment. Throughout the test, the examinee has access to the application's on-line help system, as well as other controls affecting functioning of the test (e.g., Review Directions, Skip Item, etc.).
4. Performance tracking: The Judd Test monitors all actions/keystrokes used by the examinee during task completion, as well as the time required to complete the task.

5. Scoring: Once the examinee completes the test, two types of scores are automatically calculated by The Judd Test. Accuracy scores represent simply whether or not the examinee completed the task as directed; Efficiency scores represent how efficiently the examinee used software features to complete the tasks and are based on number of keystrokes and time. Efficiency score on a task is limited by accuracy score on the task, as efficiency is meaningless unless the task is completed properly.
6. Multiple reporting levels: Judd Test results can be reported at three levels: Summary format details total accuracy and efficiency score for each item, Condensed format reports actual and maximum accuracy and efficiency scores for each task, and Detailed format provides keystroke-by-keystroke detail for each task.

Given their concurrent nature and scoring method, The Judd Tests can be used in all three of the basic human resource functions described previously. Because the tests can be configured for specific jobs (i.e., only those software features used on the job are presented in the test) and thus provide a representative sample of work behaviors, they can be used as defensible, job-related selection tools. The Judd Tests can also be used as pre-training assessments to diagnose specific weaknesses in software proficiency; the detailed level of reporting allows focus on the specific areas of software use in which the trainee requires remediation Finally, The Judd Tests can serve a post-training evaluation function, allowing both evaluation of training program efficacy and certification of trainee improvement. As concurrent tests like The Judd Tests become more common, it will be interesting to track the criterion related validity of these products and ascertain whether their performance-based nature and enhanced face validity translate into selection of higher performing employees.

The Role of Human Resource Development in Successful, Small To Mid-Sized Manufacturing Businesses: A Comparative Case Study

BOB ROWDEN

For American businesses to remain competitive in an increasingly global economy, some are calling for drastic measures to be taken with regard to training and developing the workforce. Business and government leaders continually lament the lack of motivation, education, and job skills of the American workforce but yet offer few concrete suggestions as to how to remedy these problems. The manufacturing sector, in particular, seems most at risk for losing its competitive edge (Mark, 1987). Increased automation, while stepping up production, has at the same time increased the demand for workers who can read and interpret technical instructions, instantly perform calculations, and use computers. These demands are set against a workforce that is less prepared in basic literacy and numeracy, is more demographically diverse, and is increasingly aging (Carnevale, 1988; Mikulecky, 1988). Furthermore, as the Commission on the Skills of the American Workforce (which included two former secretaries of labor and leaders from industry, labor, and education) found, "employers are even more concerned about the work habits and attitudes than skills."

For the most part, business, industry, and even government have acknowledged at least partial responsibility for training and educating the workforce. In fact, it is estimated that $40 billion a year is spent on training (Asgar, 1990). If wages and worker benefits are included in the estimate, the total cost has been estimated at $238 billion, equal to the bill for public education (Carnevale, 1988).

These figures, while impressive, can be misleading, since it is not at all clear just how this money is being spent nor how effective this training is for those sectors most at risk. For example, "only 22 percent of U.S. machine operators, assemblers, and inspectors report receiving any skills upgrade training in their current jobs. These figures rise to half or more for professional, technical, and managerial employees" (Fletcher & Alic, 1991, p. 46). Furthermore, "according to the American Society for Training and Development (ASTD), nearly 50 million U.S. workers need training but will not get it if current trends continue' (p. 46).

Developing the human resources of a company would seem to be the key to increasing production and to closing the gap between the level of worker skill and present and future needs. It is clear that "the role of human capital will continue to expand" in both "service-oriented jobs requiring extensive knowledge and training" and in manufacturing where jobs "will be highly skilled and vital for maintaining the operating efficiency of manufacturing technology" (Carnevale, 1990, p. S-4). For many businesses, however, "organizational expenditures for human capital lag behind investments in physical and equipment capital" (Carnevale, 1990, p. S-4).

Those businesses which have made training, education, and development a priority are seeing that it pays off through greater profitability and increased worker satisfaction (Coblentz, 1988; Filipczak, 1989). More than 30 years ago, McGregor (1960) noted that many managers believe that the effectiveness of their organization would be at least doubled if they could discover how to tap the unrealized potential present in their human resources. Indeed, attention to and respect for human resources was one of the major findings in Peters and Waterman's well-known study of the characteristics of some of America's most successful companies (1982). Subsequent studies have continued to underscore the key position that human resource development plays in increased performance, increased wages, reduced turnover, and worker satisfaction, to name a few (Fields, 1986; Ross, 1986; Wiggenhorn, 1990).

Most studies of successful organizations have been conducted in large corporations with well established human resource departments. In the Peters and Waterman study, for example, they "didn't look extensively at small companies" since their major concern was "with how big companies stay alive, well, and innovative." Few firms in their sample "had annual sales of less than $1 billion or histories shorter than twenty years" (1982, p. 22). The vast majority of U.S. businesses, however, are small to mid-sized having annual sales well under $10 million (Lee, 1991). Small businesses are playing an increasingly important role in the American economy as larger firms pare down their operations. "In the course of the 80's, Fortune 500 companies shed some 3.5 million jobs" (Dumaine, 1992). Small businesses (those which employ 100 or fewer people) constitute 98 percent of America's businesses (Dumaine, 1992) and "Massachusetts Institute of Technology researcher David Birch found that small businesses are responsible for 82 percent of the jobs created in the United States" (Megginson, et. al., 1988).

The economic well-being of some regions are dependent upon small businesses. This is particularly true in the Southeastern United States where the majority of manufacturing companies (88%) employ less than 200 people (U.S. Department of Commerce, 1990-91). Little is known about human resource development in these small companies.

Purpose of the Study

The purpose of this study was to delineate the role of human resource development in successful, small to mid-sized manufacturing businesses in the Southeastern United States. The design of the study was qualitative, employing a comparative case study methodology. The following questions guided the study:

1. What formal and informal activities related to employee training and development, organization development, and career development to improve individual, group, and organization effectiveness take place in the company?

2. How is human resource development, broadly defined, viewed by the company and its employees?

3. What links can be established between human resource development, management, organization behavior, and other functions of the organization, and the various measures indicative of a successful business?

Significance of the Study

To date, little is known about the function of human resource development in successful small companies. There may not even be a clearly identified unit, department, or person having human resource development responsibilities. Yet, it is assumed that the success of the company is at least partially attributable to how the employees as a resource are attended to, how they are formally and informally trained and developed.

In addition to contributing to the theory base in such areas as organization development, organizational behavior theory, and management theory, the findings from this study have contributed to the emerging field of human resource development. As a relative new field of practice, human resource development is in the process of establishing its own body of knowledge. This study, while situated in an organizational framework, provides a contribution to theory building in human resource development.

Methodology

A qualitative research design was deemed the most appropriate approach to understand how human resource development functions in small to mid-sized companies. Qualitative research is descriptive research that seeks to understand, through insight and discovery, those processes which contribute to the greater whole of an event or phenomena (Bogdan & Biklen, 1992; Goetz & LeCompte, 1983; Patton, 1990). Because of its descriptive and inductive nature, it "holds the greatest possibility for making significant contributions to the knowledge base" in applied areas such as education and human resource development (Merriam, 1988, p. 4). Qualitative case study research is a particular type of qualitative research. It is a detail examination and account of one particular context or setting (Bogdan & Biklen, 1992). It is a particular useful design when the factors or variables of interest cannot be identified a priori, and/or are so imbedded in the context that it would be impossible to separate them out (Yin, 1984). Contexts that are naturally "bonded systems" such as a class, a family, a company, and so on, easily lend themselves to qualitative case study research.

In this investigation, the human resource activity in two different organizations was selected for study and comparison. This constitutes what is called a comparative case study and involved both within-case and cross-case analysis. The within-case analysis involved detail case study write-ups for each site. These write-ups were central to the generation of insight. This allowed the unique pattern of each case to emerge before looking to generalize patterns across cases. Coupled with within-case analysis is cross-case search for patterns. This analysis improved the likelihood of accurate and reliable theory and enhanced the probability of capturing the novel findings that existed in the data.

Case Selection

Several criteria guided the selection of cases for this comparative case study. To begin with, the organizations selected were limited manufacturing companies rather than service or retail companies. Manufacturing was chosen because it has been seen as the most at risk for maintaining a competitive edge in a world economy (Carnevale, 1991; Mark, 1987). Also, manufacturing companies almost always have some form of training, whether it be on-the-job or classroom. Furthermore, manufacturing companies are likely to include some of the service, sales, and marketing components characteristic of service and retail sectors. Other criteria had to do with size and with defining "successful". Since 88% of the manufacturing companies in the Southeastern United States employ less than 200 workers, that criteria - less than 200 workers - was used to define small to midsized. Additional criteria for inclusion was: (1) survivability (in business 10 or more years); (2) profitability (met certain financial criteria); and (3) a "credit" worker's compensation experience modifier.

Data was gathered in three ways. First, in-depth interviews were conducted with key managerial and non-managerial personnel. Second, several days of on-site observations were conducted including attendance at staff meetings and training sessions. Third, all documents such as memos, letters, contractual agreements relevant to training were obtained and analyzed. Data from the interviews, observations, and documents were analyzed using Glaser and Strauss' (1967) constant comparative method of data analysis.

Findings

The first company studied is located in the metropolitan area in a large city in the Southeastern United States. The company is located in a newly constructed building in an industrial park and is engaged in the manufacture of industrial coatings and paints. They have been in business a little over 12 years. They are a privately held company but appear to meet the financial criteria of a successful company. Since they are not publicly traded they do not publish an annual report. They do have a favorable current ratio (debt-to-assets) of just over 1.0 that was better prior to the construction of the new facilities. In the words of one of the owners, "our banker feels we are in good financial condition or they would not have loaned us the $2.1 million we needed to construct this new building". The company has an NCCI worker's compensation experience modifier of .86. The company employs an annual average of 87 employees.

A total of 8 people were interviewed in this organization. A husband and wife owned the business. She managed the administrative functions and he managed the sales and marketing functions. Both were interviewed. In addition, the production manager, the laboratory manager, two crew managers, and two line employees were interviewed. Numerous documents such as performance appraisals, interoffice memorandum, and awards and plaques were analyzed. Three staff meetings were observed as well as two meetings of supervisors with workers. Several hours of observation on the production floor were conducted. Considerable amounts of data were collected and analyzed.

When the data analysis was complete, two main themes emerged. First, although the managers did not think they did any HRD related activities, they actually did several; and, secondly, there was an overriding theme of caring about the employees. This theme of caring was manifested throughout the operations of the company. When the company was going to build its new plant, they selected a site that was more convenient for the employees, even though the land in that area was more expensive than in other acceptable areas. Also, employees are encouraged to take time off from work to take care of family matters such as teacher conferences, little league games, and piano recitals or plays. Needless to say, the loyalty of the employees was without equal. As far as HRD efforts within the organization, when first interviewed, every manager -to a person- stated they did no development of their human resources (broadly defined). Analysis of the data revealed that indeed they did. First, a considerable amount of on-the-job training occurred. This included new employee indoctrination, dissemination of new procedures, as well as passing on techniques for improved production. It was learned that two employees were currently attending college, at night, at the companies expense. The company had sponsored three Asian refugees and were assisting them in getting ESL training. The company also made extensive use of vendor training for employees anytime new equipment was purchased, and extensive use was made of training provided by the "professional association" the company was a member. The company was also found to provide periodic safety training for all the employees. This often was done by in-house people, but occasionally outside vendors would be used. In short, the company did a considerable amount of human resource development. To a person, everyone agreed that the company probably would not have survived as long as it has without making the investment in its human resources it has.

The other company was located in a rural, mountainous region of a state in the Southeastern United States. The company is located in an older building it has occupied for approximately eight years. It is located on the outskirts of a small town and is engaged in the manufacture of furniture. They have been in business for about 14 years. They are a privately held company and appear to meet the financial criteria for a successful business. They have a worker's compensation experience modifier of .92. The company employs an annual average of 149 employees.

The data collection techniques were virtually identical to the first company. Since the company was slightly larger than the first, one additional supervisor and one additional worker were interviewed. The owner was an individual, who was interviewed, as was the General Manager. The same types of documents were collected and analyzed, and virtually the same observations were conducted. The results were also almost identical.

The people at this company also felt that they did not HRD. Yet, again, it was revealed that a considerable HRD effort was afoot.. The almost identical forms of HRD were found except rather than assisting employees with ESL efforts, the company aided employees in literacy training (on site). Again, the overall care and concern for the employees was evident.

As a result of the investigations at the paint company and the furniture company, a data display was developed. The data display is as follows:

COMMITMENT/LOYALTY

PERSON-CENTERED HRD PHILOSOPHY	LOW INJURY/HEALTH ABSENTEEISM	SUCCESS
-person oriented -do best job possible -special bonus/pay -free time -whole person -family awareness -share crisis/info w/ee's -plant location for ee convenience -in-house safety training -skills training -HAZCOM training -education assistance -seminars -promotion opportunities -treat ees as you want to be treated	LOW TURNOVER	

Discussion

One main theme that was present throughout the investigations. They all said they treat their employees with respect and dignity, and they treat their employees the way they would like to be treated. In one interview at the paint company, the administrative manager stated "we try to pay them a decent wage. . .treat them with respect and as humans. . .they have a life away from here. . .we don't regard them as a piece of equipment." From the field notes of the furniture company, one supervisor said, "treat them like I want to be treated. . .there's more to their lives than this job, if they need to go to their kid's school, we let them go, no problem. . .not open door, but very soft - to a point". Similar statements were present throughout the data and was supported by data found in the documents.

All the participants in the study talked about being open and divulging with each other at all levels of the company. When times were tough, the workers were the first ones to know. When additional effort was needed or innovation required, the workers were included. Even "strategic planning" included the workers. All in all, management, supervision, and the workers worked closely as a team or a "family". All relationships were close knit. Since turnover was low at both companies, they were asked if the people stayed because of pay and benefits, and the reply was "no, its because of the way we treat

company do well." In summary, the role of human resource development in large businesses has been well documented. Little has been done in the small to mid-sized organization even though they make up the vast majority of employers. A comparative case study of two small organizations reveal a similar philosophy toward their employees and toward the training and development of those employees. While both companies did not think they did very much in the way of developing their human resources, they in fact did considerable. A direct connect between the success of the organization and the development of the human resources can be drawn.

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Model for Conducting Customer Audits

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Abstract

Achieve Internal (AI) provides executive consulting, planning and training in support of service quality. Recognizing the importance of customers, AI developed a model for a customer audit. Using this approach, the customer defines what will be measured, how the measurement will take place, and what actions will result from the measurement. In the first study, 31 AI customers identified 19 aspects that they considered to be important. In the second study, customers rated the extent to which their expectations were met in each of the 19 areas. Also, they gave indication of importance. These results were used by AI to determine areas for redirection or for improvement. In addition, the results provide a baseline for future measurement. The paper ends with recommended steps for undertaking such a customer audit.

So, What Are the New Ideas Here?

We propose merging two separate streams of literature and thought -- that of the quality audit and that of market research. The quality audit literature focuses almost exclusively on examining internal processes (e.g, Arter, 1989; Rosander, 1985). In contrast, market research focuses on measuring customer satisfaction (e.g, Francese & Piirto, 1990; Hughes, 1991; Weinstein, 1987). For maximum impact of a quality initiative, we recommend that using customers to audit the quality of the organization's operations.

This paper presents a model for undertaking such a customer audit. We provide this as a method for beginning to gather information in a systematic fashion from customers. We want to show how to establish such a system and how to use the information gathered from these methods.

Why Bother Worrying about Customers?

The best companies focus on the customers. For them, it is only the customer's perceptions that really matter. These world class organizations recognize that they will not remain world class without their customers. Thus, these organizations keep in touch with their customers.

Richard E. Heckert, Chairman of Du Pont, states "As the world becomes more and more competitive, you have to sharpen all your tools. Knowing what's on the customer's mind is the most important." So, world class organizations develop various methods for gathering information from customers. Stew Leonard's grocery uses focus groups each week to provide feedback on the store's pricing, displays, selections, and so forth. Marriott uses a variety of methods for gathering customer comments. Thousands of survey questionnaires are mailed each year. And Marriott executives review guest questionnaires. Customers are invited to view model hotel rooms to provide feedback on colors and amenities. Finally, Lele and Sheth (1987) studied high quality service providers, such as those described above. They found that the leaders spent time and money to determine customer wants.

Furthermore, the Malcolm Baldrige criteria specify a focus on customers and customer satisfaction. There are six separate areas measured in terms of the organization's knowledge of the customer, overall customer service systems, responsiveness, ability to meet customer expectations, and current levels and trends in customer satisfaction. The specific areas for 1993 include:

* Customer Expectations
* Customer Relationship Management
* Commitment to Customers
* Customer Satisfaction Determination
* Customer Satisfaction Results
* Customer Satisfaction Comparison

So far, we have provided some arguments regarding the importance of customers. Organizations may be willing to concede the argument and agree that they need to pay attention to customers.

But, there is another pitfall. Too many organizations assume that they know what the customer needs. After all, executives, managers, and associates are being paid to provide the products and services that the customers want. In addition, if we turn to the literature on quality audits, we find tendency toward an internal perspective. Rosander's book on quality control within the service industries (1985) focuses on internal measurements, such as lot sampling, detection sampling, and work sampling. A more recent examination of the quality audit by Arter (1989) concentrates on the internal audit, including product audit, process audit, system audit, and vendor survey. An even more recent example appears in the article by Thornberry and Hennessey (1992). They describe the major steps needed to improve customer service. Again, much of the analysis focused on internal systems. Although they advocate gathering customer data through survey and focus group methods, they recommend using key customers only.

An internal perspective on the customer needs, wants, and desires may lead to making the wrong decisions. The Strategic Planning Institute identified the following problems. Organizations may not

* Know the customer's purchasing criteria.
* Accurately judge the relative importance of the criteria.
* Accurately judge their own performance on the criteria.
* See how customer needs have changed.
* Evaluate the quality of products and services from the customer's point of view.

While understanding the importance of the customer, many organizations may not recognize the need for developing systematic methods for gathering information from customers for letting customers drive the process.

How Do You Find Out What is Important to Customers?

One popular way to gather information from customers is to undertake a survey. Typically, a group within the organization identifies the dimensions or attributes of concern. These are then transformed into a survey.

Davidow and Uttal (1989) warn that this perpetuates the gathering of information focused on internal concerns. Albrecht and Bradford (1990) and Clemmer (1992) recommend an approach that first identifies the dimensions that are important to customers.

We will describe the development of a customer auditing system within the context of a consulting organization. Achieve International (AI) provides executive consulting, planning and training in support of service quality. As a supplier of services in the Total Quality Management (TQM) area, AI recognized the importance of conducting customer audits.

Aspects of service quality were identified by customers. Focus groups of customers were conducted. A total of 25 customers who planned to continue as AI customers identified aspects and then ranked their importance. Another 6 customers who were uncertain as to whether they would continue using AI services undertook the same exercise.

From these data, we identified 19 key aspects for use in a survey of all customers:

* Customer-Focused
* Responsive
* Pleasant to Do Business With
* On the Leading Edge
* Model of Service Quality
* Expertise in TQM
* Ongoing Contact and Follow-up
* Ability to Advise Strategically
* Product Quality for Retreats
* Product Quality for Academies
* Relevance of Educational Materials (e.g., articles, audiotapes)
* Ease of Access
* Emphasis on Self-Sufficiency
* Ease of Registration for Client Events
* Frequency of Client Events
* Accuracy of Invoicing
* Accuracy of Material Shipments
* Timeliness of Invoicing
* Timeliness of Material Shipments

Although some of the aspects were not unexpected (e.g., customer-focused, on the leading edge), other expectations were more of a surprise. For example, timeliness of invoicing, while obvious once noted, was not something the executive team would have identified as an important expectation.

We provide the above listing with a warning label. This list is of importance to the AI customers. These aspects may or may not be of importance to the customers of any other organization. Our message is that each organization must find out what is important to its customers.

How Do You Measure Customer Expectations?

When reaching this question, presumably aspects of product or service quality have already been identified. The next step involves taking those aspects and gathering some measurements from customers with regard to those aspects. In the case of Achieve International, the objectives of the second phase were twofold: (1) To gather baseline information using the key aspects, and (2) to identify areas for improvement.

We want to emphasize three critical features of our work in this phase of the study. First, we asked customers about how the services provided by AI met expectations. Second, we measured the importance of these customer- identified aspects. Finally, we gathered the data with the customer in mind.

Customer satisfaction surveys are quite common, but we were not merely interested in customer satisfaction. Rather, we wanted to determine whether or not customers expectations had been met. Beyond that, we wanted to find out if customer expectations had been exceeded. Therefore, we asked: "Please rate Achieve International on each aspect on a scale from 1 to 7. '1' means Achieve International fails to meet expectation, '4' means Achieve International meets expectations, and '7' means Achieve International exceeds expectations."

From our previous study, we identified the 19 aspects that customers considered important. Those results on importance to customers were somewhat limited. They did not include information gathered from all customers, and they did not provide a ranking of the importance. Therefore, we included an item in the second survey that gathered data on the importance of the 19 aspects.

A common method involves the use of a mailed questionnaire survey to customers. Since the customers were located throughout the United States and Canada, a mailed questionnaire survey appeared to be an attractive method. However, given that the customers were primarily executives, we realized that a mailed questionnaire would not work. We needed the personal touch. So, we decided to combine two methods -- a telephone interview, accompanied by a faxed survey.

This approach gave us a high response rate, even though we surveyed extremely busy executives. We obtained an 89% response rate. Among phone survey participants, all but four respondents also completed the questionnaire.

So What Did We Find?

Customers rated the importance and the level of service of the 19 aspects of service quality for AI. From such ratings we could determine which aspects fell into the following four categories:

* Very important, with high ratings on service.
* Less important, with high ratings on service.
* Very important, with low ratings on service.
* Less important, with low ratings on service.

Aspects in the first two categories, such as responsive and customer-focused, show areas of strength, but they differ in one important way. In the first category -- very important, with high ratings on service -- customers told us that the expectation was both important to them and we were doing well in meeting it. The second category -- less important, with high ratings on service -- provided us with even more information. Customers told us that we were doing well on the aspect named but that it was not important to them. that is, we were putting resources into areas which made a marginal difference at best. Here was an important opportunity to rechannel resources presently devoted to less important aspects to those with a higher priority.

Aspects in the last two categories show areas for improvement, as for example frequency of events. However, greatest attention needs to focus on the third category: those aspects considered very important but with lower ratings on service. Responses from open-ended items provided suggestions for improvement.

Based on our knowledge of our customers, we recognized that needs change over the course of a quality initiative. Therefore, we examined the data based on length of the client relationship with AI:

* Last 1.5 years.
* 1.5 to 2.5 years.
* Over 2.5 years.

These analyses helped us to determine which aspects were important at different stages of a TQM effort. We found that three aspects were important regardless of the stage of the TQM implementation:

* Expertise in TQM
* Ability to Advise Strategically
* Responsive

Other dimensions differed in importance depending on the TQM stage. For example, organizations early in their TQM effort rated the aspect of "customer-focused" as important, whereas organizations with a longer TQM history rated "relevance of educational materials" as important.

Such results emphasize the need for examining the results of a customer survey with some knowledge of the customer in mind. Those undertaking a TQM effort have different needs at different stages. Thus, our analysis provided additional information to help AI better service its customers.

How Did We Use the Results?

Communicating the results of a customer survey internally and externally provide good next steps. Unfortunately, for many organizations, using the information from customers to change an organization may seem somewhat strange and threatening. However, using such information can create "customer excitement." Moulton, Oakley, and Kremer, 1993) emphasize the importance of customer excitement. Such excitement goes beyond merely satisfying customers to creating customer loyalty.

In the present case, the analyses and interpretation helped to identify several areas for future focus. AI began by taking immediate action toward improvement. Those aspects that were rated as very important with low ratings on service demonstrated areas where competitor organizations could potentially erode AI's position in the marketplace. Specific action plans were developed, and efforts were undertaken to overcome problem areas. For example, AI is working on a database to track additional customer information. This database will serve several functions, including increasing AI's ability to assist customers in sustaining the momentum of their TQM processes and raising the overall level of knowledge concerning specific customers among AI staff.

In considering the suggestions for improvement, we took a leaf from the Harley Davidson turnaround story. Harley Davidson competes successfully with Japanese motorcycle companies like Honda, because it not only listens to its customers but also applies its own professional judgments on what will actually work. "They listen closely to riders' design suggestions -- although they seldom adopt them literally because of technical requirements, government regulations, and other practical restrictions" (Reid, 1990, p. 191). AI has taken a similar approach. For example, in one of the focus groups, customers wanted a very prescriptive model of how to implement Service/Quality, on the belief that this would avoid some of the pain and all of the dead-ends which inevitably occur. Since this would be tied into numerous consulting days, this had some superficial

attraction. However, such an approach would also weaken the customer organization's ability to resolve these types of issues internally and lower its changes of long-term success. As a result, this suggestion should be explored further before implementation. So, listening to the customer does not mean blindly providing what is demanded. One's own technical expertise must also be engaged to deliver a service which truly meets customer expectations.

In addition, we distributed a condensed version to our customers, with an indication of what we were doing to address the suggestions from the survey. By publishing the results, we hoped to put into action our belief in our partnership with customers, as well as provide a model of what they might wish to do with their own customers. All our suppliers also received the condensed version. This will help them understand how their work impacted AI's customers, as well as set the stage for any modifications in our operating procedure which were required to address any customer concerns.

Thus, the survey results have already led to changes within AI. The results also provide a baseline for future measurement. In the future, we can determine what specific changes have had an impact on customer perceptions of service.

So, What Are The Implications for Other Organizations?

We have presented a model for a customer audit and a case study using this approach. Based on our experience, we propose some specific steps that any organization can use to include their customers in a quality audit:

1. Let customers identify aspects to be measured. We used focus groups with selected customers to help determine aspects to be measured for AI. You may want to use focus groups or interviews.
2. Gather information from all customers. Knowing about key customers is important; however, limiting your customer knowledge may result in too narrow a focus for your business.
3. Let customers dictate the data collection method(s). In our survey we used a combination of methods to collect data. The telephone interview, followed by a faxed questionnaire survey, communicated to these executives/customers that we really wanted their responses.
4. Obtain measures of both importance and satisfaction on aspects previously determined to be of importance to customers. With data on customer satisfaction, you can determine what areas need improvement. With additional data on importance, you can decide what areas need immediate attention.
5. Let customers tell you in their own words why their expectations have not been met and what improvements they suggest. This information proves invaluable in helping the organization make quality improvements that customers recognize.
6. Determine additional factors for analysis that may affect customer satisfaction. For AI, an important factor was that of length of the client relationship. Over the course of a TQM effort, client needs appeared to change. Depending upon the organization's products and services, you may need to examine one or more customer factors, such as buying activity, buying potential, market segment or geographic location.

7. Identify specific actions to remedy customer concerns. Surveying the customers is a wasted effort if no action results. Specific changes must be planned and executed for a customer audit to be of benefit to the organization and its customers.
8. Monitor customers using the customer audit on an on- going basis. This means that the organization needs to measure the initially-identified aspects in the future. Such measurement provides the organization with an indication as to the customers' perspective on changes that have been made. Using the customer audit methodology also implies that you will let the customers define the dimensions or aspects in future surveys. So, you will have to balance continued measurement of aspects of importance in the past with the inclusion of aspects that prove to be important today.

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Development, Review and Management of Human Resource Development Curricula on an Electronic Database

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Because curriculum development often becomes a laborious endeavor, common practice is to appoint a curriculum specialist or curriculum committee and allow them to develop the specific units of instruction. Because so few are actively involved in the process, the resulting curriculum, in human development and other areas of study, may not be what is desired by those who will use it most. Curricula that do not meet the needs of educators and youth are rarely used. Therefore, most curricula are reviewed and pilot tested with resulting comments and suggestions returning to the specialist or the committee and then back to the reviewers. This process of writing and reviewing may go on for months, even years, rendering some of the materials out-of-date before they are printed and distributed. The question becomes: Is it possible to develop curricula and supporting educational materials more quickly and effectively by making them more accessible to reviewers at various stages in the curriculum process? The ability to do so would increase the quantity and quality of the educational materials now being produced throughout the United States. In addition, instructional designers would be better able to adapt curriculum development to program and environmental circumstances (Wedmen & Tressmer, 1991; Dowding, 1991; Tressmer, 1990), and more important, to those being educated.

In 1964, Lindvall, Nardozza, and Felton outlined the steps curriculum development that are largely used in formal education today. The steps include: defining specific behavioral outcomes, developing activities and supporting materials and determining evaluation procedures, not only for the learners, but also for the curriculum itself. They noted that curriculum is not just a single product, but a series of products and supporting materials should be continually updated to assure its viability for many years. Wedman & Tressmer (1991) illustrated the complexity of the curriculum development process through a "layering" model and several authors have compared this complexity to a circuit board. Dowding (1991) noted that the area of curriculum development is so complex and the resources (time, money, support) so few that instructional developers often "cut corners", affecting the quality of educational materials that are produced. Kane (1992) pointed out that there may well be differences in the development of quality materials for learners.

Jolly and Zacharias (1990) discussed the importance of identifying critical success factors that might influence the design and use of information management systems. Tredle and Miller (1992) recommended for consideration that additional resources be devoted to emerging technologies and joint programming efforts among states. Duin (1992) is now studying how information technologies affect communication and the development of knowledge in "academic" and "nonacademic" learners.

Based on a new technological advance in developing textbooks for classroom used by McGraw-Hill Publishing (1990) and the research conducted by Debra Schafer (1991) on electronic database systems in extension, this faculty member set out to see if it was feasible to develop, distribute and manage curricular documents on the electronic database systems, PENpages and PENNLink. The purpose was to increase the amount of human resource development materials a designer could produce and speed the review of materials by both professional and volunteer educators while maintaining or increasing the quality of the input.

After preliminary discussions with the coordinators of the PENpages system, Mincemoyer (1992) concluded that PEN system would be an appropriate medium to develop and manage various types of curricular documents. In addition, Kane (1992) proposed that new developments in technology would improve the means to review and "jury" materials on an electronic database.

PENpages was designed in 1985 to disseminate extension news and research developments and provide a reference database of educational materials for the Penn State University's College of Agricultural Science's faculty, staff, and the Pennsylvania public at large. PENpage documents are developed by faculty to transmit information to these groups of people.

The objectives for the establishment and continued development of PENpage documents included providing: Twenty-four hour access to information, a low-cost method of disseminating information, a means to facilitate the exchange of information among cooperating agencies, and a way to easily update information to make it more pertinent to today's needs. PENpages has grown steadily over the past seven years, and now contains over 11,000 documents. It is directly accessible to extension agents in Pennsylvania, and throughout the United States and in many parts of the world by Internet. PENNLink was established to extend the information and resources from the Penn State University to school districts in Pennsylvania.

From 1988 to present, various types of curriculum support materials were developed on PENpages and PENNLink to enhance home economics and human resource development subject matter instruction. In 1992, actual curricula were developed on the system and reviewed by professional and volunteer educators. Review, circulation, and other data were compiled to:

Evaluate the development and review process for speed, accessibility and the quality and quantity of materials developed.

Access what extension agents and volunteers see as the curricular limitations of traditional and electronic methods of curriculum development,

Make appropriate recommendations for curriculum development and instructional strategies.

Current trends in curriculum development and electronic technology were studied through a content analysis of available materials. Responses were summarized from curriculum specialists and electronic document developers. Actual curriculum materials were developed and comparisons were made of:

the time it took to develop and review the materials

the costs involved to various extension groups

the number of reviewers and their perceptions of the review process
the accessibility of materials

the quantity of materials the faculty member was able to develop over time

the reduction of out-of-date materials

the length of time the curriculum was used before revision was needed

the use of PENpages to manage the curriculum documents.

The study found that PENpages and PENNLink provided a desirable means for distributing materials for review, decreased curriculum development time and effort by 1/3, and increased the number of reviewers nearly 50 percent over previous efforts. Professionals were able to locate and print materials easily without the wait of duplication and mailing from a central office. Costs were greatly reduced for the developer but were slightly increased for the reviewer if the materials were printed in order to read them. More time is needed before it is possible to determine if the length of time the curriculum was used is shortened or lengthened by this process.

It was found that overall explanations of the curricula and evaluation forms could be put on the system and were used by the reviewers, although some modified the format to allow additional space to write. The developer found it a great advantage to correct and modify the curricular documents just as soon as the reviews arrived so that subsequent reviewers could see the changes and not have to re-indicate the problem. Some individuals who reviewed the materials a second time found it useful that all the changes appeared in capital letters so fewer comparisons needed to be made with earlier documents. Others found this made reading the documents confusing and/or distracting.

It was possible to obtain the number of accesses for each of the specific documents developed. Within a three-month period, specific documents could also be tracked, giving an indication of specific individuals or groups that accessed these materials by county, state and country. Some of the materials were accessed by other states, but no reviews were forwarded to the developer.

Development, review, management and support materials that seemed to be the most easily adapted to the system were:

printed materials

curriculum committee planning minutes

evaluation surveys

announcements

newsletters supporting the curriculum

bibliographies

reviews of related books, articles, and audio visuals, abstracts, inservice outlines, and related fact sheets

Least easily adapted were the organizational documents, such as curricula grids showing instructional concepts. These were much more difficult to design because they had to be "spaced over" and could only be shared in a "horizontal" or up-and-down format. Also, a menu showing the organization of materials on the system was found to be necessary in order to let the reviewer know how each curriculum document "fit" within the entire curriculum plan and, later, allowed educators to know the variety of curriculum documents placed on the system.

Because of the limited use of fonts, underlining and tabbing capabilities, and lack of graphics on the electronic systems, final drafts could not be reviewed with full graphic capabilities. Some reviewers remarked that reviewing the materials without the graphics made the documents seemed somewhat "dry" and "lifeless" and many found them difficult to "get through".

There was some problem loading documents longer than ten pages in length, though this was usually solved by loading the documents twice. Documents longer than 20 pages were a problem, however, particularly in the downloading process.

Because of the lack of formatting available, the major slow-up to the development of the curriculum materials on an electronic system was found in the stage after the review when the document had to be reformatted to send to a publication editor. This required that two documents be created: One, to keep on the system and another to send to the publisher/printer in their required style.

The review process could have been smoother if it were possible to complete the review form on the computer and return it electronically. All the subjects in this study had to return their forms by mail. While the technology was available, the cost and time delays to develop this interactive feature were weighed. It was found that once the form was completed, the time spent sending the form back to the developer was minimal except at the time when all the materials were due.

In all, the study found this means of curriculum development efficient and effective. As electronic databases become more accessible and as we determine how they can best be used for curriculum development, greater knowledge of these systems will result in improvements to the technology. This project was a first attempt at using a database to develop, review, and manage educational materials for a specific educational effort. This study should be replicated using different types of curricular materials for different educational settings., and ways to attract and obtain reviews from other states and countries should be studied, as well.

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*Total Quality Management In Higher Education**

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Abstract

This paper presents a management philosophy that can be used to improve the quality of degree programs at extension campus locations. The philosophy and related principles focus on two distinct areas: (1) defining and understanding problems that dampen quality functioning; and, (2) the applied problem solving process. The approach rivets management attention to the basics of Total Quality Management (TQM). The quality process described seeks to achieve consensus on *what* quality is and *how* to manage it--through debate, cooperation and effective decision making. An essential ingredient is organizational commitment. The ideas are transferable and should be evaluated by education administrators ready for a fresh look at the management of quality at extension campus locations.

In spite of all that has been said and written about quality in higher education, both educators and administrators in university after university report that quality programs too often ***fail to*** ensure the delivery of degree programs of the highest quality at extension campus locations. Planned strategies for quality management are temporarily set aside or permanently abandoned to deal with day-to-day realities of problem resolution (e.g., operations crisis or student services issues) at extension campuses. Political infighting, simple apathy, logistical issues or pragmatic solutions can derail and damage strategies for ***continuous quality improvement***.

This paper has an underlying theme -- to emphasize to both educators and administrators alike that total quality management programs and the principles of continuous quality improvement can work. The challenge is to detail the ***who***, ***what***, ***when*** and ***where*** to integrate programming and continuous quality improvement in higher education.

Service Line Management

Service line management in higher education provides an environment to achieve:

"... a price competitive, student-centered organization."

What does the phrase mean? The intent is straightforward and twofold--to ensure that the organization's practices and processes are quasi-optimal (i.e., they meet or exceed the industry standards of excellence) and that students' requirements and expectations are met. Our nation's renewed interest with (the importance of) customer focus and satisfaction is epitomized through the Malcolm Baldrige National Quality Award annual competition [1].

Further, the phrase is derived from a management philosophy that utilizes the strategic planning process to accomplish the university's quality goals and objectives. The strategic planning process refines both the development and integration of quality requirements into all dimensions of service production. This ensures the active participation of ALL work units in the university's quality management program.

The management literature strongly suggests that "... ***form*** must follow ***function*** " in a service oriented organization. A simple translation of the foregoing suggests that first, work activities must be defined and implemented. Subsequently, a suitable organizational structure must be established to support the work environment and productivity systems. Unfortunately, the organizational design process described, is NOT always practiced. In reality, function more typically must adapt to existing (or modified) form. This simple observation has profound implications in the provision of services in higher education.

First, because most universities DO NOT engage actively in the organizational design process they tend to become mirror images of each other and experience several of the same organizational problems. Second, because most universities and their top executives proceed through the planning process "by-the-numbers" and without ever seriously engaging in strategic thinking--the planning effort (often) lacks both strategic vision and direction. A strategic plan that fits this description is of little or no practical value. In strategic thinking, the objective is to break down a specific problem situation into segments and through rational analysis discover the quasi-optimal solution [2].

A challenge for education administrators is to ensure that work groups and functional responsibilities are supported by the organizational structure. In general, the opposite is true. With regard to functions, activities are organized by departments (or schools) and decentralized through an extensive committee system of management that includes both academic (e.g., quality review) and administrative functions (e.g., student services). Structurally, the departments (or schools) and committee system are so overburdened that there is NO practical way to provide ***effective*** feedback in a rational, strategic planning process. In this situation, too much structure is harmful to the university and dampens quality programming efforts.

Total Quality Management

The phrase--Total Quality Management or TQM, is based on the extensive writings of three Americans--W. Edwards Deming [3], Philip B. Crosby [4] and Joseph M. Juran [5].

- Deming's principles and work on statistical quality control guided the quality turnaround in Japan's Post World War II, economy.

- Crosby defines quality as conformance to requirements and advocates zero defects in a quality program that focuses on prevention.

- Juran has developed a quality trilogy--planning, control and improvement, as a universal way of total quality thinking.

Their philosophies on total quality control are summarized eloquently in a recently published volume and are not repeated here [6]. Instead, the concepts which are common to their quality philosophies are applied to this discussion. Today, there is an on-going quality *movement* in higher education. The movement is inclusive to encompass all efforts to define, measure and improve service quality and overall service delivery in higher education.

In 1993, the dimension of ***quality*** in higher education is more difficult to manage, as the concept itself is growing in complexity. We need only look to the rapid development of distance learning technology at both urban and rural extension campus locations to illustrate that point. For example, a proliferation of options in the telecommunications area (e.g., full-motion video over telephone line, talking heads via satellite broadcast) are altering education service delivery, dramatically. The shift in professional interest ***from***

the more fundamental areas of definition and measurement of quality ***to*** the more complex issue of total quality management is recognition of the fact that total quality is much more than inspecting outcomes in higher education.

Several universities have recently adapted total quality management methods and approaches in some way. A 1990 survey reports that 17 institutions are implementing total quality programming in some part of the graduate or undergraduate curriculum [7]. In five institutions, total quality programming is used only for instruction or research. The most significant work to date is associated with two-year institutions.

What Is Quality?

What is quality in higher education? That is not an easy question to answer. It is perhaps easier to talk about quality and its uses rather than move straight to definition. When asked to differentiate degree programs at the university, the proud Chancellor will answer "...the ***quality*** of faculty and facilities" at this institution. However, when asked to be specific in both definition and measurement of quality, a long pause follows. Measurement is difficult!

The quality management concept is best described as knowing how each person in the university views and understands what quality is; and, what is their individual role is in making continuous quality improvement a reality. Widespread adoption of this concept has led to an evolution of quality thinking in higher education circles ***from*** reliance on outcome assessment and inspection-based quality programs ***to*** full integration of the total quality management concept. The latter is based primarily on institutional commitment to total quality in education service delivery through process-oriented control.

A ***process*** is a series of actions or operations that lead to a particular end or result. The phrase, process-oriented control, attempts to discover through observation and analysis, cause-and-effect relations that dampen quality programming in higher education. The approach can provide rich ideas for improving higher education on your college campus.

In order to keep the discussions within reasonable bounds, emphasis is placed on two types of interrelated quality activities--quality planning and an operational model of quality management. The latter is applied at Chapman University's 40 extension campus locations.

Quality Planning

Total quality is emerging as the dominant management theme in higher education policy and practice. The total quality concept subsumes: (1) the ***technical question of quality measurement*** (i.e., the measure of practitioners' performance in education service delivery) as well as (2) ***organizational measures*** of quality that focus on structure and process variables (i.e., operations issues, student services issues). The former includes the dimension of total satisfaction (as defined by the student) and the latter details such elements as quality strategy and institutional commitment to quality. The total quality concept emphasizes systems analysis to develop integrated quality programming in a student-centered institution.

Problem solving is an integral part of the quality management process. In its simplest form, the problem solving process consists of a set of activities that take the university through five basic steps:

1. Problem Definition--Identification and articulation of the quality problem. (What is it?)

2. Data Gathering--Assemble relevant information about the quality problem. (What data is needed?)

3. Problem Solving--Analyze work flow and service production. (What is the cause and effect relationship?)

4. Solution Formulation--Implement the preferred alternative. (What is the preferred course of action?)

5. Follow-Up Activities--Evaluate the selected alternative and initiate follow-up action. (What feedback information is needed?)

Needless to say, the technical aspects of problem solving are the most cumbersome. The obvious question at this stage is to ask ourselves--"How can we manage total quality?" The broad structure and the role of managers are relatively simple to comprehend. However, the complexities of total quality management confound the issue of how best to proceed. This is so because TQM taxes our thinking, strategically. In strategic thinking, an objective is to dissect a quality problem situation into its constituent parts and through rational analysis discover a quasi-optimal solution. That statement is profound and implies that there is more than one way to state the quality problem question.

For example, if the quality question is framed as--"What should be done to improve the quality of education at the extension campus location? -- TWO solutions come to mind. First, review the credentials of the academic center faculty. And second, utilize operations reports to identify problem areas for corrective actions. Note, however, that these possible solutions are ***prescriptive***, only!

What if the quality question is framed differently--"Is this local faculty capable of providing high quality instruction?" This formulation of the quality question is more focused and requires a great deal of rational analysis. A positive response to the question indicates conformance with standards of teaching excellence. A negative response suggests the need to review hiring practices or the need for inservice training. If we fail to grasp the nature of the quality question, a likely outcome is a ***poorly*** organized quality management program.

The message is simple and clear. Quality problem issues must be carefully integrated into the strategic planning process. Only then will purposeful work lead to higher levels of quality instruction, overall. This view contradicts the fundamental idea that more of the *status quo* (e.g., inspection-based reviews) is required to ensure quality in education programming.

An Operational Model Of Quality Management

In 1990, Chapman University launched a program to develop improved quality management of its academic programs offered through extension campus locations. The program, titled--***Quality Investment*** is described in detail to highlight the university's efforts in total quality management.

The purpose of *quality investment* is to create a process by which the quality of service delivery and operations could be assessed on a continuing basis. Chapman's Quality Investment Program (QIP) is designed to identify quality issues and provide standards for assessing quality functioning as outlined and discussed in the *Handbook of Accreditation* [8] prepared by the Western Association of Schools and Colleges (WASC).

More specifically, over 70 WASC academic standards were identified as appropriate concerns for this effort. The standards are multifaceted and address: degree programs and special programs, student services and the learning environment, information technology, the role of faculty and academic center operations.

Table 1. illustrates the *faculty role* in academic programs. The table presents the WASC academic standards, the Chapman Academic Center (CAC) quality standards and suggested documentation.

TABLE 1
FACULTY ROLE IN ACADEMIC PROGRESS

WASC STANDARDS

5.A4 Members of the faculty are qualified by academic background,degree, and professional experience to carry out their program and institutional responsibilities in accord with the purposes of the institution.

5.A.5 The institution has adopted, published, and made available to all faculty and students, a policy established by the governing board, assuring academic freedom in teaching, learning, research, publication, and oral presentation. Terms of employment and procedures for termination and/or academic non-renewal of faculty contracts contain adequate safeguards for protection of academic freedom.

5.A.6 Primary responsibility for classroom instruction rests with the faculty. Teaching fellows and assistants receive proper orientation, supervision, and evaluation by appropriate faculty. Minimum standards of preparation and personnel policies governing employment of teaching fellows and assistants are established and enforced.

5.A.7 With regard to the obligations and responsibilities of part-time faculty, the institution has a policy designed to integrate them appropriately into life of the institution.

CAC QUALITY STANDARDS

5.A.4 The Center Director shall assign only faculty who are approved by the appropriate academic department. A completed instructor application packet and appropriate course approvals will be maintained in a secured file.

5.A.5 The Center Director shall make available to every faculty member and student appropriate information regarding academic freedom in teaching, learning, research, publication, oral presentation, and academic integrity, as well as University policies pertaining thereto.

5.A.6 The Center Director shall ensure that teaching fellows and assistants, when utilized, are properly oriented, supervised, and evaluated by appropriate faculty.

5.A.7 The Academic Center Director shall plan and initiate activities which are in accordance with institutional policy and procedures designed to integrate part-time faculty appropriately into the life of the institution.

SUGGESTED DOCUMENTATION

5.A.4 Complete application files for each faculty member with departmental approvals for courses assigned to teach.

5.A.5 Record of dissemination of orientation material, such as the Chapman catalog, the graduate bulletin, and other locally produced documents.

5.A.6 Where such fellows and assistants are used, a faculty memo is to be included in the course file.

5.A.7 Annual plan of integrative activities; records of Academic Center and Campus faculty involvement in activities intended to foster integration of the two groups; description of orientation program for new faculty; list of materials on Chapman University that are provided to all faculty.

For example, WASC Standard 5.A4 focuses on academic credentialing in teaching specialty area. The corresponding CAC Quality Standard 5.A4 requires that only approved faculty be utilized for instructional purposes. The suggested documentation under 5.A4 includes a complete application file with curriculum vitae, and all course approvals, identified.

A complete list of the 70 WASC academic standards, the CAC quality standards and suggested documentation is published in Chapman University's *Quality Investment Program Handbook* and, is not repeated here [9]. Each academic center is responsible for maintaining the complete set of WASC academic standards. Local interpretation of documentation needs is encouraged and accomplished. Further, the process is collaborative with active participation of both faculty and administration at all stages in the operationalization of the standards.

Table 2. outlines the Quality Investment Program process. Each of Chapman's 40 academic centers is required to prepare a quality investment self study as identified in the table. The university then initiates a QIP team visit, and requires the formulation of a center-directed action plan to address the visiting team's findings and recommendations. The follow-up procedures ensure that issues needing attention are corrected.

TABLE 2

CHAPMAN UNIVERSITY ACADEMIC CENTERS QUALITY INVESTMENT PROGRAM

The Chapman University Academic Centers Quality Investment Program (QIP) has been devised to afford a systematic and continuing process for assessing and improving the quality of educational programs.

A. Quality Standards

1. Based on Western Schools and Colleges Association Accreditation Standards.
2. Standards are topic specific to Academic Centers programs and were developed and approved by College and Academic Centers administration, faculty and staff.
3. Recommended documentation is specified for each Quality Standard.

B. Academic Center

1. Emphasizes incisive self-evaluation by Academic Center Director, faculty and staff.
2. Quality Standards provide guide to self-analysis.
3. Self-Study affords opportunity to identify both strengths and deficiencies.
4. Encourages immediate action to address identified deficiencies.

C. Quality Investment Team

1. Permits validation of the Academic Center Self-Study Report.
2. Affords opportunity for representative of several interested University components to better understand Academic Center programs and operations.
3. Prepares a QIT visit report reflecting its findings and recommendations.
4. Findings and recommendations of QIT Visit Report serve as the basis for planning and conducting appropriate developmental activities at the Academic Center.

D. Follow-Up Actions

1. Vice Provost for Lifelong Learning reviews QIT Visit Report recommendations to determine action required.
2. Academic Center Director develops Action Plan to address QIT Report recommendations.
3. Vice Provost for Lifelong Learning arranges joint support activities with Campus staff to complement Academic Center Developmental activities.
4. Academic Center Director submits follow-up reports on attainment of Action Plan objectives.

Note that the five steps reviewed in the *Quality Planning* section of this manuscript are implemented during this stage of quality investment.

The QIP team visits began in June 1991. Since that time, the university has conducted a total of 17 QIP team visits, with little change in the design of the program. The university's next scheduled team visit in this on-going effort, is March 1993, at our Cheyenne, Wyoming Academic Center. The single exception is the follow-up phase--which is currently under review at the university. In particular, the university is developing protocols to ensure that corrective actions to quality problems are effective.

In general, the original goals established for QIP are being met. An analysis of QIP team visit reports reveals that more than 200 quality problem or issue areas identified at 17 academic centers have been corrected through problem solving, solution formulation and follow-up activities. Chapman is developing a reputation in the WASC region for getting things done. I know of no greater accolade in the management of service production in higher education

Besides the more mundane issues of determining whether academic centers are meeting prescribed WASC academic standards and operational requirements, a number of unplanned benefits are realized. In particular, the program has raised the awareness of faculty and administrators alike with respect to the intrinsic value that comes with developing innovative ways to achieve higher levels of quality. Second, at the micro level, everyone comes to learn that quality is everyone's responsibility.
Too put it simply, there is more to quality programming than a set of standards!

For example, the University's QIP has evolved to include other new activities. This academic year, Chapman faculty, administration and staff have collectively formed work teams to address quality functioning issues through strategic thinking and rational analysis. In November 1992, the university held its first system-wide, one-day symposium on *critical issues* facing Chapman University.

The symposium focused in part on the framing of quality questions affecting higher education. The identification and articulation of quality problems guided the formulation of follow-up, planned activities established for the spring semester.

In February 1993, a major issue identified at the symposium--the need to support professional staff development, was operationalized in the form of a three-day workshop to address process-oriented issues in the staff development area. In March 1993, a follow-up activity designed for users of information technology is planned to improve the level of service they (staff) deliver to Chapman students. Both staff and administration agree that selective investment in staff development improves quality and saves both time and money at the university.

Sounds great? This is clearly the time for a cautionary note. Don't go overboard in the pursuit of total quality. In an era of frugality, the watchword is value-added in quality programming efforts. A total quality program is doomed to failure if senior staff isn't committed or if the university hasn't settled on a consistent approach. To repeat a statement made earlier in the presentation, when form follows an understanding of function in a service oriented organization, then and only then, will the university realize continuous quality improvement.

Notes

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International Etiquette: Changing Individuals And Organizations To Prepare For Global Connections

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Understanding cultural differences can mean the difference between success and failure of an international business venture, yet U.S. citizens know little about the cultural complexities of the world and are geographically and culturally illiterate. Many international business organizations have found that an apparently small indiscretion or an impolite moment can ruin an important contract negotiation or agreement and endeavor to prepare their agents with training programs. Human Resources departments must play a central role in planning and implementing the international thrust of its organization. (Padgett, 1992; Martin, 1989; Hampden-Turner, 1991; Weeks, 1992)

Only a few cross-cultural research projects have clarified the problems of cultural influence in business, but culture, economy and business success are linked. Procter and Gamble had losses of over $200 million by the mid-1980s in Japan because they were not prepared to deal with the different market culture in that country. Even AT&T's business style, despite an international training program, has clashed culturally in international ventures. When developing an up to date international human resources plan, both sufficient time and tools are needed. Significant changes require time to implement and experimentation. (Nasif, Al-Daeaj, Ebrahimi, & Thibideaux, 1991; Lee & Green, 1991; Hampden-Turner, 1991; Weeks, 1992; Bixler, 1992)

The leaders of global companies must have international vision. Human resource executives in Week's study agreed that "ideal to executives in a world-class company should be: free of national prejudices...posses a global rather than a nationalistic orientation to people... (p. 13)." Yet Weeks (1992) reports that executives "do not consider foreign language capability" necessary since much business in world done in English (p. 16). (Rodkin, 1990; Franke, Hofstede, & Bond, 1991)

However, it has been found that companies should spend more time and care matching executives to the expatriate jobs and that assignments outside the country are not for everyone. Human Resource executives involved with such assignments believe that ability to communicate, flexibility, tolerance, and persistence are desirable characteristics for expatriate managers and that impatience and aggressiveness are not. Other useful indicators for potentially successful expatriate managers include knowledge of business, interpersonal skills, past job performance, previous travel or living abroad, eagerness to work abroad. (Weeks, 1992)

The failure rate of U.S. employees who go overseas to work is very large. This is not caused from lack of technical competence but because of not getting along in the culture. In London the failure rate of US employees is 18%, in Japan 36%, in Saudi Arabia, 68%. Interestingly, the problem works both ways. Japanese managers who move to this country report similar problems. Some are very successful but overall they have an even worse failure rate. (Cauldron, p. 36; Stening & Hammer, 1992; Levy & Teramura, 1992; Prud'homme; 1990; Peters, 1991; Weeks, 1992)

Trends in global development include more short developmental assignment for scientists and engineers abroad. These assignment will be of 3 months to a year duration with dependents not relocated. Also look for global competition and hiring of top names. First international assignments will come earlier in one's career. More foreign nationals will work in the corporate center in the home country. International joint ventures in foreign markets will be common. Upper middle level executives will transfer to international assignments but short-term foreign assignments will be the norm for senior executives. They will have to deal with changing management styles in many countries.

executives. They will have to deal with changing management styles in many countries. One of the greatest causes of joint venture failure has been cultural misunderstanding or differences of corporate cultural style. Internationally experienced CEO's will be sought. More foreign students from top schools will be recruited by U.S. firms because of the problem finding technical staff in this country. Ironically, although many businesses are interested in expanding to international markets, budget constraints have meant reduction in Human Resources staff just when they are needed most. With the shifting and emergence of new trading blocks and increased collaboration with international firms and colleges, Human Resource staff should expect to deal with much more language and cultural instruction. (Thurley & Wirdenius, 1989; Weeks, 1991; Cauldron, 1992; Sheridan, 1992; Cattaneo, 1992)

Clark (1990), a successful training consultant says, "we audit productivity, not awareness. That's a very important distinction between cognitive and behavioral information (p. 43). He and others suggest the development of holistic kinds of training interventions and approaches based on behavior instead of just presenting cognitive information. This will provide skills allowing effective interaction in a specific work role in another culture. (Clark, 1990; Maruyama, 1992; Cauldron, 1992)

Lack of preparation and awareness of taboos can even be dangerous. Some countries take their manners very seriously. Some social expectations may even be made a subject of law. A person who foolishly engages in confrontational or controversial actions might land in jail. Drunk driving can be a very serious offense in many countries and may be charged against someone in an accident who is not at fault. The stories told about the jails in foreign countries are very true; they are not a good place to spend time in. On the other hand, custom or law in another country might create problems regarding U.S. law, for example, in gender or ethnic issues. In many countries, it is still a man's world and women in corporate roles are not able to work effectively. Also, some national groups are not accepted culturally or even legally as company representatives. It should be kept in mind that in some locations it is possible for discrimination to be hostile. (Padgett, 1992; Franke, Hofstede, & Bond, 1991; Martin, 1989; Hampden-Turner, 1991; Weeks, 1992; Axtell, 1985b)

The US rushed style of conducting business is not appreciated in parts of the global market. Warnings that "the pace and even the spirit of business around the world is usually at odds with the aggressive management style preached in large U.S. companies (Weeks, 1992, p. 18)" are not heeded. The Japanese have been particularly critical of foreign companies that ignore advice on how to enter their markets profitably. Rapid expansion style is a negative factor when dealing in Asia or Middle East. Such style makes use of very short term objectives that do not allow the development of understanding preferred in other nations. (Levy & Teramura, 1992; Weeks, 1992; Clark, 1990; Savage, 1988; Rodkin, 1990; James, 1992)

When preparing to work in another country, the employee needs to know: nature of job responsibilities, authority level, reporting relationships, external relationships, and about the compensation package. The basics of living abroad should be explained, like housing, work permits, visa regulations, crime or terrorism situation, available food, clothing, and shopping, schools, churches, health facilities, recreation, social amenities, climate, and the cultural environment. The role company wants the employee to play in local society must be considered. Geographic information, conditions of isolation, and other information helps prepare the employee for changes. (Weeks, 1992; Axtell, 1985b; Savage, 1988)

Good manners are an essential business skill. To conduct business and engage in social activities the most important things to know are how to say people's names, eat, dress, and talk (Axtell, 1985b, p. 6). The basics of history, religion, economy, and government about the location should be learned. Corporate files should include such information for employees to access. Other sources of information include people who have lived in foreign countries, books, recent news articles. If training fails to cover all needed subjects, remember that good manners derive from sensibility and common sense. (Claiborne, 1989; Ettore, 1992; Axtell, 1985b; Bixler, 1992; Benton, 1989; Savage, 1988)

While in another country, use products from the country instead of bringing coffee, food, shampoos, and other items. Remember that you and yours are not the center of the universe. Also, it is ethnocentric to use a generic term such as "people" to refer to only white people and it is statistically incorrect to refer to people of color as minorities because they compose eighty percent of the world population. Using such terms or terms such as "exotic" creates an assumption that whites are the norm and that others are aberrations. (Rodkin, 1990; Wines & Napier, 1992; Martin, 1989; Blau, Ruan & Ardelt, 1991; Axtell, 1985b; Three Rivers, 1991)

In every country, the prepared employee will know what to do if arrested or in a threatening situation. Every U.S. citizen should have the name of the U.S. ambassador or consul, the twenty-four hour number of U.S. mission (available from the State Department), the address and telephone numbers of issuer of traveler's checks, a certified copy of birth certificate in addition to a passport (some countries require it). It is also wise to take precautions to keep safe such as not walking in public places or wearing conspicuous clothing, jewelry. It is best to not carry the passport unless required to, but carry a copy of the passport and an international driving permit.
Avoid scams with street vendors, airports and crowds who slit purses or pickpocket. (Savage, 1988; Davis, 1988)

Don't make the mistake of lumping all the Asians together or all the Middle Eastern countries or all the African countries. Asians are not mysterious or inscrutable, North Americans are not stoic, Latin Americans are not hot blooded, Middle Easterners are not terrorists, Jews are not rich, not all African Americans are athletic. Countries quite close together physically may be miles apart in culture and etiquette requirements. Be sensitive to the political issues between Taiwan and The Peoples Republic of China. Another major difference between cultures is in the perception of time and orientation to past, present, or future. Citizens of the US believe that time is money and that time can be divided into discrete units and can be saved, spent, wasted, or bought. The pace, values, expectations and terms of reference are different in each country. Basics such as the amount of eye contact used to show support or subordination or sincerity should be understood. American virtues may be held in disdain or be insulting to other nationals. (Savage, 1988, p. 106-7; Carlton & Huey, 1992; Whitley, 1992; Usunier, 1991; Maruyama, 1992; Clawson, 1991).

Business cards are a must because the card is "proof that you really do exist (Axtell, 1985b, p. 8)." They are exchanged in almost every situation from casual or formal. At a business contact it provides a visual aid to name pronunciation. Rank and position or pecking order is very important in some cultures and the business card helps place each individual where they belong. Therefore, one must take care to sound as important as one is; the business card is not the place for modesty. In Italy it is customary to put Dr. in front of the name with just a bachelors degree. In Asia sometimes the title of professor is used more loosely than in other countries. At other times the exact kind of professor is specified. Information on the card should include organization, name, position, and titles with no abbreviations. Once in a foreign country, the reverse side of the cards should be printed in native language if possible. This is easy to do in Tokyo, Japan and Hong Kong or may be arranged by some international airlines, (Axtell, 1985b; Rodkin, 1990)

In some countries, the manner in which the business card is presented is important. In Japan, present it with both hands, type facing recipient, right side up to the perspective of the recipient. In southeast Asia, Africa, and the Middle East (except Israel), do not present the card with the left hand. (Axtell, 1985b, p. 8; Rodkin, 1990).

The pronunciation and order and meaning or importance of names in other countries is often mystifying to U.S. visitors. It is very important to master the intricacies of names in order not to offend others. Research and practice ahead of time are urged. In Singapore and China, the position is: Surname (first) then Middle (in middle) then Given name. The name in first position should be combined with titles so that one doesn't end up calling someone "Mr. John". However, in Taiwan, often a Christian first name appears before all others (Gerald Lu Xing=Mr. Lu). In Korea, the position of names depends on whether the first or second son is being addressed. In Thailand, Mr. is put with the given name. The Japanese use Mr. with the surname. If, after time, one becomes very friendly and if a Japanese uses ones first name, it is allowed to use the Japanese last name and add "san." To make it more confusing, be prepared for the occasional Asians who have changed the order or pronunciation of names to suit Westerners. It is worth being alert on the matter because in the Eastern Hemisphere, name frequently denotes social rank or family status and a mistake can be an insult. In Latin America, names are mostly a combination of the mother's and father's name, with the father's used in conversation in Spanish speaking countries (Joseph Mendez-Pagan=Mr. Mendez), but in Portuguese speaking Brazil, the mother's name comes first. Always ask, "what would you like me to call you?" Explain U.S. customs regarding names and see how the other party reacts to suggestions regarding name use.(Ettorre, 1992; Axtell, 1985b).

Americans looking for American food in a foreign country are often a great puzzlement to the natives. Often, the local food has much to offer. Also, it is important to be accepting of the food offered because this is often taken to show acceptance of country or host or company. Visitors are often offered delicacies or specialties of the country. Sometimes this food is excellent and sometimes it is very unusual with a taste that does not appeal to the visitor. However, one should try to eat what is offered. It may be necessary to swallow fast or cut the item in small pieces. Often hosts are very understanding about religious taboos in food, so such restrictions, should be made known. Watch for clues how to eat unusual items, observe host, or ask. (Axtell, 1985b; McCaffree, 1985)

In Sweden, an appetizer of red meat that appears similar to sausage is served. It may be horse meat. You may or may not be able to avoid it. Other European countries sometimes serve horse meat also. In Japan, fish is often served raw or even still alive. In China, some provinces specialize in serving dog. It is considered to be good for you, "warming." Other Chinese offerings may include bear paw, sea slug, or goose foot soup. Both chickens and ducks can come to the table with heads attached, especially at banquets. Sea Urchins with a texture something like plastic and not much flavor appears on the table in seaside communities of China. Fish can be served still alive here too. Although it is possible to claim being a vegetarian to get out of eating certain things, food is very expensive for the Chinese host, so try to eat some of everything. Australians sometimes eat kangaroo meat. In Argentina very good beef is available and in Peru and Chile one will be served a great deal of seafood and shellfish. In parts of Africa monkey and gorilla are eaten. In Saudi Arabia, one might be served sheep's eyes; otherwise, Middle Eastern food is nonexotic. Jewish food is also nonexotic. (Rodkin, 1990; Axtell, 1985b; Interviews, 1993)

In Italy, Spain, Latin America, lunch is a very big meal and can lasts two to three hours. But everyone goes to work afterward! So try to keep to small servings, or order appetizers instead of large plates of food at restaurants. In Malaysia, if eating with Chinese, guests will be given chop sticks and spoon; if eating with Hindu or Malay, the guest may be given no tools (one should eat with the hands). Pork is served by Chinese, but no pork with Malay. Hindus and Buddhist will not serve beef. One does not accept rice or grain served at the end of the meal or eat quite everything on the plate with the Chinese or Romany as this signifies that one is still hungry (an insult). (Axtell. 1985b; Rodkin, 1990; Hancock, 1991, p. 670; Interviews, 1993)

The Chinese, including those in Hong Kong, have developed elaborate mealtime customs. Whole books have been dedicated to explaining the nuances of Chinese food and dining. Besides studying the cuisine of China, it is a good idea to practice eating with chopsticks. There are parts of China where there simply are no forks available. Chinese may serve a guest with their own chopsticks, or everyone at the table may serve themselves from a communal bowl. Some parts of China, the chopsticks are reversed to take food from the communal bowls. Chinese show good manners by keeping your plate full and by serving dish after dish of food. It is best to eat small portions of everything instead of a large serving of one or two dishes. Dishes continue to be served throughout the meal and the person who fills up on the first ones will be unable to sample the later ones, thereby being rude. Be advised that Chinese food can be very spicy in some locations. (Rodkin, 1990; Mc Caffree, 1985; Axtell, 1985b)

Eating with Chinese gives a real opportunity for offending because of social taboos, symbolic order, social markers, rules of commonality, symbolic messages, degrees of hierarchy, exclusion or inclusion, boundaries and transactions across boundaries about which the foreigner generally does not have a clue. This subject is usually not covered in guidebooks. The Chinese presume adults do not need instruction in such basics. However, they have very low expectations of foreigners. Customs
"associated with behavior at the table make an enormous difference in the way one is perceived by a Chinese host (Cooper, 1986, p 182)." Cooper's 1986 article is recommended to find out more about the rules of the Chinese table and the differences about eating at a friend's home, in restaurants of various types, and at banquets.(Rodkin, 1990; Mc Caffree, 1985; Axtell, 1985b; Cooper, 1986)

Appropriate clothing is necessary when dealing with other cultures. Although one might be tempted, it is best not to dress in native costume unless one knows what one is doing. It is easy to presume incorrectly about the use of certain items of dress. However, if possible, try to blend in by not wearing starkly different (in color or weight or style)clothing. Also, the degree of formality of those being dealt with must be matched. For example, the Japanese are rather formal; dark suits and tie are required for men and suits or dresses for women. However, a meeting held at a country inn of Japan requires wearing a kimonos (furnished by the inn). Jeans, jogging clothes or shoes, shorts, tee shirts, tight clothing, weird hats, and unbuttoned shirts are usually unacceptable. No immodest clothing can be worn in conservative Arabic countries, especially for women. No shoes are worn within Muslim mosques or Buddhist temples or Japanese homes or restaurants (unless the owner insists). When shoes are removed they should be set neatly facing the door. In India or Indonesia, shoes are not worn when the host or hostess is not wearing them. In China, shoes are sometimes removed in homes or rooms with floor covering (instead of cement). (Axtell, 1985b, Interview, 1993)

Don't expect everyone to know English. American English with idioms and accents is not the universal language, although PRC now prefers to learn American English. Do not use slang, colloquialisms, abbreviations, or curses. Do not expect American humor to be appreciated in other countries. Humor is difficult to translate. Memorize a few key words, phrases, and toasts and carry a phrase book. Business organizations should be aware that translation of products or advertisements can give wrong idea. Be careful of translators; have someone else monitor business conversations if possible. Never underestimate the language barrier. (Axtell, 1985b; James, 1992)

The number of American learning foreign languages is increasing a bit. The foreigner in Japan, can be confused easily because it is customary to put the best face on even the worst situation. The Japanese language has an ambiguous quality and one is not necessarily dealing with a firm yes or no. A conversation may sound or appear affirmative, but is only so because the Japanese do not like to disappoint, especially in front of others. In Japan, businessmen should not ask the big boss for an answer to a business proposition, details are expected to be worked out at a lower level, privately. Specifics of the Japanese method of negotiation and the basic differences between Japanese and other Asian methods of business management should be supplied in training sessions. Axtell, 1985b; Maruyama, 1992; Rodkin, 1990; Kohl, et al, 1993; James, 1992; Cauldron, 1992; Thurly and W 1989; Lee & Green, 1991)

Business people from Great Britain do not talk business after sundown or at the end of a business day. The Japanese do not talk business on the first meeting, however, but do talk business into the night. Whenever they get together, it is for business reasons, even if business talk does not come up. There is less separation dividing time between work and home with the Japanese. Arabs conduct business with more than one person at a time, which can be a bit confusing to an American. Arabs also do not wish to rush things.(James, 1992; Axtell, 1985b; Rodkin, 1990; Hampden-Turner, 1991).

Americans should beware of body language which may give totally different meaning than that intended. Posture of the body can communicate crucial information or emotion. It has been found that when two people of different cultures talk in a language familiar to both that they automatically assume that they also know and understand nonverbal cues which contributes to misunderstanding. It is wise to eliminate certain gestures, such as the one Americans use to mean OK, thumb and forefinger making a circle. This is an obscene gesture in many countries, similar to the American third finger gesture. In Columbia, if someone make this signal and then puts the fingers over his nose, it means the person in question is a homosexual. The V for Victory symbol can also have a similar meaning when done in certain ways. Snapping the fingers in France or Belgium can have a vulgar connotation. (Rodkin, 1990; Poyatos, 1988; Matthes, 1990; Axtell, 1986b)

The common American wave with whole hand in motion frequently means no. In Greece the same gesture is a big insult. In Europe, the wave is palm out, fingers only moving. The American hitchhiking sign is a rude gesture in many places. The similar thumbs up sign is obscene in Australia. The Longhorn symbol known in Texas is also a good luck symbol in Brazil.(Axtell, 1985b; Rodkin, 1990, p.126)

Americans prefer to stand two or three feet apart when conversing. South Americans prefer standing closer. Latin Americas in general get face to face, close, squeeze shoulders, have eye contact, touch lapels, and hugs. The Chinese are used to being close, think nothing of getting close in conversation, but also seem adaptable to farther apart. Chinese males sometimes hold hands with other males and females with other females, usually with friends or to show friendship. In Slavic lands expect bear hugs. The French sometimes kiss cheek to cheek. Arab males can hold hands and may not realize westerners feel uncomfortable doing so. Arab men blink their eyes very slowly. They also do not like to look at shoe soles; do not prop feet on a table or desk or cross leg over knee. (Interviews, 1993; Axtell, 1985b)

The Japanese are more comfortable with no body contact. They prefer to bow from the waist with hands sliding down the sides, back and neck stiff. The bow is a must at formal occasions. Senior executives who do not know much English can at least communicate with a respectful bow. The form of the bow tells much about position and relationships. Business inferiors should be allowed to bow lower and longer but equals match bows, adding an extra one when wanting to show a slight edge of respect with someone older or a source of business. When one is unsure of status, it is safest to bow just a shade less than them. With the top man, If he really outranks you, out-bow him and keep those eyes to the floor (sneak a peak to see how low he is bowing however). Do not bow with hand in pocket. The Japanese consider eye contact a lack of respect. The correct form is to take an occasional glance while conversing (instead look at the desktop, fingers, or carpet). This means you must have your shoes shined. (Holtgraves, 1992; Axtell, 1985b)

The use of alcoholic beverages varies a great deal from country to country. Islamic countries usually do not have alcohol but all the rest do. Toasting, alcohol games, and fast and hard drinking are often the rule and a host can be insulted by refusal to drink. Women have an easier time refusing than men. (Interviews, 1993, Axtell, 1985b)

The policy on tipping varies greatly from country to country and should be investigated. Some countries, like China have an official position on tipping not allowed. Tourist guidebooks often give good information on tipping. In general, do not tip if a service charge is included in the bill and try not to get caught with only large bills. If there is a no tipping sign, observe it. Davis, 1988; Baldridge, 1990; Bixler, 1992)

No corporation wishes its agents to be involved in nonproductive behavior. Instead corporations want fruitful business relationships brought about by representatives of high quality. The pursuit of quality implies change. Organizational plans for involvement in the global community require training programs that will bring about changes in the actions of personnel who will be part of the international arrangement. These changes must be well planned and implemented with enough time allowed to be effective. Changes in the global market and new opportunities for worldwide business ventures requires excellent preparation and involvement of personnel on all levels. Human Resource departments will be critical to corporations looking for international success.

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Differences in Cognition, Perception, and Social Behavior Between the East and West: Implications for Training Programs

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Educators have long noticed the differences between the East and the West regarding the cognition, perception, and social behavior of students. Of course, all Easterners do not fall into one mold nor do all Westerners. Countries quite close to one another physically may be many miles apart culturally or in social behavior. Every culture or sub-culture favors or inhibits certain behaviors or abilities creating groups with their own peculiarities. There are also cross-cultural similarities caused by what is common to humanity no matter where a person is born or under what society a person has been raised. (Rogoff, 1990; Usunier, 1991; De Mente, 1989; Maruyama, 1992)

In terms of cognition, the Easterner is often said to be holistic, gestalt, and concrete while the Westerner is said to be lineal, sequential, and abstract. Maruyama (1992) labels four different "mindscapes" of individuals and explains that cultural differences arise when one type becomes dominant and influences others (p. 92). In terms of social behavior, the Easterner is said to be indirect, cooperative, non-confrontive, and interdependent whereas the Westerner is thought to be direct, verbal, competitive and independent. The indirectness of Eastern social relations is difficult for the Westerner to understand and causes frustration in intercultural dealings. On the other hand, Easterners think that the Westerners are pushy and that they rush into things. (Clark, 1990; Three Rivers, 19 ; Usunier, 1991; Maruyama, 1992; Cooper, 1986)

The mind set of educational systems reflects the norms of its society, East or West. Cultural differences are also reflected in training programs enrolling students from different ethnic backgrounds. Lack of knowledge about cultural differences might prevent administrators and trainers from evaluating, serving, and teaching students effectively. Conversely, trainees or students may not know how to make the best use of educational programs without knowing how to adapt to the context of a new educational system, whether it be in the East or the West. The greater the cultural isolation of members of one society from another, the greater will be the problem of adaptation of to training situations. This presentation aims at examining how students of different ethnic backgrounds learn and behave in the educational setting and then attempting to find connectable differences and common ground upon which to launch a mutual understanding and enhance intercultural communication. (Caudron, 1992; Sheridan, 1992; Cattaneo, 1992; Cooper, 1986; Omaggio, 1987)

Learning styles reflect cultural background. For the most part, it appears that Easterners learn holistically while Westerners learn sequentially. Easterners like to be guided through a learning process while Westerners prefer to work independently or with a hands-on approach. Easterners also seem to learn best aurally through story-telling, metaphors, and examples. However, Westerners are very oriented to visual materials and models that lead towards abstract thinking. Training programs should consider the nature of students, supplying more guidance and approval for those students who learn best with such encouragement. Student/student and teacher/student relationships also differ between cultures. Differences in learning strategies, partially imposed by cultural experience over time, create misunderstandings in cultural educational situations. Westerners are more task-oriented and Easterners more person-oriented. Easterners prefer to cooperate with fellow students where Western students often prefer to compete. Furthermore, Western

students often look upon the teacher as a learning partner in a challenging relationship. The role of the Eastern student is more passive than that of the active Westerner. The role of the teacher in the East is that of an authority figure who is the only source of knowledge. These are real differences that can cause persons from the opposite cultures to rub the wrong way in relationships. Recognition of these differences can bring about new ways of conducting collaborational educational programs to replace those that are more ethnocentric. Something as simple as a short, friendly visit before a more formal counseling session or class can put an Eastern student at ease with a faculty member or counselor. The Westerner advisor will not seem so direct or disinterested in the student by sparing a little time to relax and get to know the other. Western students might be supplied with more visual materials and models. Games that do not stress competitiveness could be developed that could be played by both. (Celce-Muria, 1991; Omaggio, 1987)

In terms of communication, generally, Western students are direct and to the point. Eastern students are often indirect and use a convoluted approach to communication. The differences between the Eastern and Western students or educators often create barriers to understanding. However, ways must be found to work toward a synergy between the Eastern and Western systems. The use of different methods to carry out the same task can actually contribute to a better understanding of theories and methods or systems of training across cultures. Students and educators from all cultures must be taught or shown the best way to make connections and show sensitivity to others and to adapt to various learning situations and styles. Only then can top- quality training programs be developed that will fill the needs of all parties.

Westerners have a strong sense of self and make a clear distinction between the self and others. This is emphasized in writing as shown by the careful documentation of ideas that come from sources other than the author. To do otherwise raises the charge of plagiarism. However, the Eastern culture possesses a strong sense of nonself whereby the self is tied to relationships. This conception is rooted in the philosophical traditions of Taoism and Confucianism and fits socialist views. The difference is also described as rights-based versus duties-based. (Schweder, 1992; Dien, 1983; Lee & Green, 1991).

Achievement in the East is likely to be considered the result of cooperative effort not personal effort. Most Indians, for instance, do not distinguish between the self of others. Nakamura (1964) wrote that "in India, the tendency is not to regard another's self as an independent subject of action opposed to one's self (p. 930)." As a result, Easterners do not cite as strictly and precisely as Westerners and feel free to borrow ideas from others. Some Oriental students have a problem conceptualizing the need to document when writing papers and are puzzled when criticized for not doing so. This difference illustrates a basic difference in the concept of ownership and self that should be considered by instructors. (Dien, 1983) The concept of face is a predominantly Eastern characteristic that is not well understood by Westerners. Although the facesaving concept is actually found to some extent in almost all cultures, it is developed to a greater degree in the Oriental. One can be spoken of as having face, saving face, or losing face. Face is an abstract construct that is used to project identity. The concept plays a part in understanding cultural differences and creates difficulties in training situations. For example, the Japanese customarily attempt to put the best face on any public situation and will give ambiguous or falsely positive statements. The Japanese language itself has an ambiguous quality that contributes to the confusion (Caudron, 1992; Axtell, 1985b; Holtgraves; Kohl, Barclay, Pinelli, Keene, & Kennedy, 1993; James, 1992)

Another difference found between the Eastern and Western individual directly related to the cultural upbringing is in the perceptive style of comparative dependence. Witkin (1962) developed the concept of psychological differentiation, including the aspects of field-independence and field-dependence. Field-independent people tend to rely on internal referents and function more autonomously while field-dependent people tend to rely on external sources of information and therefore take more account of the views of others when forming opinions. In cultures where parents are dominant and conformity is

expected, more field-dependent children are raised. In cultures where parents encourage individual freedom, initiative, and equality in the family, more field- independent children are raised. In the Eastern culture, children are expected to respect authority and conform to rules, therefore producing more field-dependent youngsters. (Stewart, 1972; Marsella, De Vos, & Hsu1985) The pace of life and business, values, and terms of reference are different in every country and culture. One must know how to meet the basics to get along. For example, the amount of eye contact needed to show subordination or support or sincerity should be understood. The cultural expectations of behavior, how one conforms to these expected patterns has a great deal to do with the way one is perceived as a person in Asia. Therefore, trainees need to be taught how to react appropriately in various situations, how to recognize social patterns, and how to predict how the patterns will act so that they may function in that social arrangement. Understanding of these perceptions and conforming to recognized patterns will help cross social barriers of two cultures. (Cooper, 1986; Savage, 1988; Carlton & Huey, 1992; Whitley, 1992; Omaggio, 1987)

One important part of cultural difference is linguistic development. Language makes a crucial difference in structuring the way surroundings are perceived. People are sorted by cultural standards and become their linguistic label. Communication mediates a child's contact with the world from its beginning and teaches it how to share with others. Part of cultural learning includes the knowledge of symbols used in the society. Culture and cognition meet and blend, developing morals and transmitting standards of behavior. Children are embedded in a way of life that may be literary, narrative, or some other. Communication skills vary across cultures and language is a major socialization tool. Difference in verbal and nonverbal communication develop with an emphasis on explicit verbal statements in cultures that emphasize Western schooling. (Gellatly & Rogers, 1989; Spradley, 1987; Trevarthan & Logotheti,1989; Rogoff, 1989; Cole, 1981; Kuczaj, et al, 1989; Rubin, 1992; Philip; 1977).

Nonverbal body language is also greatly influenced by culture. Westerners have found that they sometimes give the wrong message with their body language. Since body language is such a basic part of a person's communication, it has been found that when two people of differing cultures talk in a mutually understandable language that both believe or automatically assume that they both also know and understand nonverbal cues, which it turns out they do not. Therefore, training programs should include awareness of body-supplied clues and nonverbal language. (Poyotas, 1988; Matthes, 1990)

Training must incorporate both information and behavior modification in order to meet international needs. Multicultural collaboration, although challenging, can produce excellent, useful training programs where trainees can develop skills and proficiencies needed for their community. Besides business organizations, educational institutions are becoming involved in international programs that join East with West. For example, since 1982, U.S. universities, Including Texas A&M, have been opening overseas campuses in Japan. These university branch schools have developed even more since a Japanese-U.S. trade meeting held in Tokyo in 1986 determined that such schools were important for the expansion of trade and improvement of relations between the two countries. Some business experts and consultants believe such collaboration is necessary for survival of international businesses and global prosperity in the twenty-first century. (Clark, 1990; Takesue, 1990)

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Trans-Texas Videoconference Network

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The Texas A&M University System (TAMUS) became Texas' first institution of higher education to implement a major digital videoconference network in the spring of 1991. Interactive meetings and classes are now taking place across the state of Texas on a daily basis. The Trans-Texas Videoconference Network (TTVN) has reduced time-consuming travel, increased the productivity of administrative organizations and brought together TAMUS employees who only rarely had the opportunity to meet face-to-face. Faculty members can now teach in more than one place at the same time, broadening the intellectual base of the eight system university campuses.

TTVN is currently the nation's largest university-operated two-way interactive digital video communications network. A present total of nineteen network locations includes all of the TAMUS university campuses, the TAMUS office of State Affairs in Austin and research and training centers in Dallas and San Antonio. The institute for Biosciences and Technology in Houston and the Scott and White Hospital complex in Temple completes access to all the major metropolitan areas of Texas.

History

Prompted by the expansion of the Texas A&M University System from four universities to eight, Texas A&M began working in 1989 with GTE Southwest to assess the feasibility of implementing a state-wide high-speed data and videoconference network. Consolidation of costly leased data links and connection of computing resources in the far-flung system became a high priority for the uniform management and exchange of information in both the administrative and research sectors. Digital two-way interactive videoconference service provides a convenient avenue for meetings and classes with signals which travel simultaneously on the same telecommunications links as computer data.

The design of this comprehensive system-wide telecommunications network was guided by the Texas A&M University System Telecommunications Council, with Dr. John J. Dinkel, Associate Provost for Computing as the chair, and R. M. Sather, Manager of Telecommunications at Texas A&M University in College Station. In addition to the data communications requirements of TAMUS, the need for person-to-person communications for administrators, faculty and researchers that transcended the great distances across Texas was realized. During 1989 and 1990, extensive research into the technology available was conducted by Dr. Dinkel, Mr. Sather, and Dr. Rod Zent, Director of the Texas A&M Educational Broadcast Services. A number of videoconference systems from different manufacturers and systems integrators were evaluated, along with a number of data transmission systems.

Construction of the TAMUS Interactive Services Data Network began in early 1990 with funding from the system universities and agencies which include the Texas Agricultural Extension Service, Texas Agricultural Experiment Station, Texas Engineering Extension Service, Texas Engineering Experiment Station, Texas Veterinary Medical Diagnostic Laboratory, Texas Transportation Institute and Texas Forest Service. As a part of the data network, the Trans-Texas Videoconference Network was created to provide cost-effective two-way audiovisual communications between all parts of TAMUS.

In the third quarter of 1990, VideoTelecom Corporation of Austin, Texas, was selected to provide videoconference systems, which incorporated an array of features important for the support of teaching and meetings. In addition to video and audio facilities, each system features interactive graphics capabilities, a VCR and a FAX machine, plus the ability to transfer data between locations.

A system of land-based T-1 telecommunications links was leased for transmission purposes. T-1 lines are essentially high-capacity, high-quality telephone circuits which provide cost effective 24-hour service. T-1 telecommunications utilize a combination of fiber-optic, microwave and standard telephone technology to provide a 1.544 mbps bandwidth which accommodates the 768 kbps videoconference data stream and a variety of data channels for computing services.

Special Network Features

TTVN is connected to the Sprint Meeting Channel videoconference network which reaches over 1000 other locations worldwide. More than one hundred U.S. businesses and several universities are on line. Sprint Meeting Channel fees for videoconferences outside of TTVN usually cost far less than airfare and lodging. The Sprint Meeting Channel has the capability to connect two-way videoconferences with distant locations such as the Texas A&M branch campuses in Koriyama, Japan and Castiglion, Italy.

Videoconferences can be connected between any two TTVN locations, or up to fourteen locations can be included in one voice-switched multiway videoconference. Several independent meetings can be conducted simultaneously in different parts of the state. Service is available twenty-four hours a day, every day of the year at no charge to TAMUS personnel.

Utilization of the TTVN Network

TTTVN has been used for videoconferences and for instruction. Major administrative users include the TAMUS Chancellor, university presidents, administrators from various departments such as Budgets and Information Systems as well as several of library personnel. Representatives of the Texas Higher Education Coordinating Board, the Texas Education Agency and the National Science Foundation have participated in TTVN videoconferences. TTVN has also been demonstrated to other universities such as the University of Texas, University of Houston and University of Tennessee.

Beginning in the fall semester 1991, several academic courses were conducted using TTVN. Dr. Doug Biggs from the Texas A&M Department of Oceanography and Dr. James Bonner from Texas A&M Department of Civil Engineering were the first instructors to use the system to reach off-campus students. Substantial increases in videoconference traffic on TTVN have materialized through the two years of operation. Growth is expected to continue as more faculty, students, researchers and administrators take advantage of this important communications tool.

Current Challenges

Due to rate of growth, the network has been challenged to provide services to different users with a variety of needs. Information from the instructors about the success of the system was gathered by surveys and interviews of students and instructors in which they discussed their experience. As a result of the collected information, several changes have been made. These include the following modifications:

1. Technical improvements
   A. The vendor provided an improved digitizer which reduced jerky movement in the video and clarified the audio signal.
   B. Replacing ATC as long distance carrier , to improve the number of completed calls.
2. Customer Satisfaction
   A. Training was extended from a two-hour session to a full day, which included instruction on how to effectively present material using TTVN.
   B. An instructional manual was also provided to the participants.
   C. During spring 1993, a student was hired at Moore Communication Center to assist instructors teaching evening classes.
3. Administrative Issues
   A. TTVN rooms were rearranged, to maximized local student comfort.
   B. A new system was installed in Eller Oceanography and Meteorology building making it more accessible to more instructors.

The staff at TTVN would like to assist users and improve service in the technical, customer service and educational areas. These goals include:

1. Technically--Success every time in completing the conference with quality audio and visual clarity.
2. Customer service--Improved responsiveness to customer needs
3. Administratively--Increased awareness of the system by providing information about the TTVN system and how to effectively use it.

In order to promote the goals of quality and development three major questions must be addressed. First, the rate of growth in relation to the support staff must be determined and an adequately funded. Next, the members of a quality team must be carefully selected to include all the current and potential users of TTVN. Then, the collected data must be analyzed to solve the problems and provide ways and means of improving customer service to TTVN users.

Planning To Grow Toward Quality

Throughout the Texas A&M University System, two-way interactive instruction is being provided by Trans-Texas Videoconference Network (TTVN). TTVN is part of Educational Broadcast Services, housed in Moore Communication Center on the main College Station campus. A unique opportunity has been offered through TTVN to members of the Educational Human Resource Development department at Texas A&M University due to the new telecommunication system. As an innovative technology, research direction has been provided for studying the implementation process and the initial reaction to TTVN. A hands-on experience combining daily use of technology for distance education, research and implementation within the learning context presents an ideal blend of research and technical implementation.

Definition and Goals

Quality assurance has become equated with seamless and superior service. Getting the desired results from total quality management requires encouraging the improvement process and continuing to work toward a specified goal (Leibman, 1992). That specific goal is customer satisfaction, because quality is defined by the expectation of its customers (Bass, 1993). The new emphasis on quality has been defined in terms of the following key aspects:

1. Meeting and exceeding customer expectations
2. Continuous improvement in both the product and the process
3. Cycle time acceleration

The foundation of quality orientation is the focus on customer requirements. Understanding customer requirements develops the focus of the entire organization. The key elements of Total Quality Management (TQM) include a focus on the customer, by using facts and analysis to determine progress, benchmarking or charting the changes with careful record keeping, an emphasis on teamwork, recognition of performance, continuous improvement and responding to the market through correction and prevention (Bass, 1993).

Basically TQM is a philosophy, which represents a change in corporate culture and in the beliefs, values and visions of the entire organization. The team approach requires shared control which can succeed only if employees are committed to the organization to customer service and to continuous quality improvements. In the past, many workers have been told that it is not their job to think, but rather to do what they have been told. The traditions of conformity and obedience have now been replaced by the consensus approach. A sense of ownership results from group decision-making. The old saying, "If its not broken, don't fix it," has become outdated. The new quality approach is that "we can always make it better." Continuous improvement is achieved by the Plan, Do Chart and Act cycle known as PDCA cycle. Finally, empowerment of employees results when responsibilities for decisions are broadened from the traditional leaders or managers to all the workers (Walton, 1986).

Fourteen Points to Quality

Dr. W. Deming is acknowledged as the initiator of the quality movement. He worked at General Motors in the 1930s where he applied statistical analysis to the manufacturing process. He was asked to go to Japan after World War II to assist in re-building the Japanese manufacturing structure. He analyzed failures experienced in the U.S. and determined that top management as well as all the levels of workers had to be involved in the change process in order to insure success, so he began working with primarily with corporate executives to develop a unified, cohesive long-range plan. Fourteen points evolved that represent his core philosophy. Some of these are more applicable to the operation of TTVN than others, which are illustrated as follows:

1. Constancy of Purpose
   There are two sets of problems to address including immediate and long-range consequences. Constancy of purpose involves innovation, research and education, continuous improvement and a constant investment in maintenance. In terms of TTVN, the short and long term goals must be clearly articulated.

2. Total commitment to quality
   Poor workmanship, uninformed employees, poor training and inattentive service hurts profits and leads toward failure to initiate change. There must be constant reinforcement toward improvement. This requires the adoption of a new philosophy where customer service is of primary importance.
3. Discontinuance of mass inspection
   Inspection costs too much and doesn't work. Quality must be built into every process and product. Inspection should be a review or a way of finding what is being done at a given time. Data on each conference should be charted to use for decision-making later.
4. Stop shopping and hopping
   Price should not be the sole determinant of business contracts. Traditionally, corporations contract parts and services from a variety of vendors, which increases variation in parts and services. Shopping around for the best price compounds the problem because "defects beget more defects." Specifications are used as the models for purchasing equipment which presents a barrier to continuous improvement. With a minimum number of vendors a closer worker relationship can be established and long-term mutual goals can be implemented. The selection of the TTVN system represents a minimal numbers of vendors.. The relationship with the Austin-based company, VideoTelecom illustrates the benefits of working with one vendor toward mutual growth. This relationship should be explored for further benefits.
5. Constant on-going improvement
   Small incremental amounts of recorded improvements should be the goal, instead of turning things around in a short time frame like 3-6 months. Teamwork is an essential part of the process and the staff at TTVN and EBS have used graduate students to assist in the evaluation process through surveys, questionnaires and interviews.
6. Maximize training
   Control charts should be used to record performance. Training should continue until performances are statistically stabilized. Trained graduate students in the classrooms would be of assistance in charting data from transmissions and could assist TTVN instructors.
7. Institute Leadership
   An emphasis on numbers and speed rather than rather than quality, produces poor workmanship and poor attitudes. This is also caused by inferior equipment, problems with raw materials and is aggravated by not including employee improvement suggestions. By working closely with students in the Educational Human Resource Development department and Communication and Journalism courses, leadership skills can be developed in both students and TTVN personnel.
8. Eliminate fear
   Fear is usually a factor in preserving the status quo because employees are afraid to admit mistakes for fear of being fired or reprimanded.
9. Break down barriers
   Barriers between workers must be eliminated if the organization is to succeed as a whole. TTVN staff has encouraged a close personal relationship between the users and technical staff. This has had a positive effect in the instructors' comfort with using the system for instruction.

10. Discard slogans and targets
    Slogans should be eliminated because the slogans often create frustration and resentment in the workers. Slogans like "Zero defects" imply to workers that they aren't working hard enough.
11. Banish numerical quotas
    Numerical standards or quotas impede quality, because they are based on an average performance. Incentive pay, another part of the old system, encourages turning out numbers rather than quality. An atmosphere of receptivity and recognition is more productive. Evaluating the success of TTVN by the number of users or conferences rather than the quality of service encourages inferior goals.
12. Encourage pride in workmanship
    Employee barriers must be removed by empowering employees with authority to make decisions to improve the quality of the product.
13. Develop on-going education programs
    For long-term success, a company must invest in education for its employees. Rather than firing and hiring, new jobs require a continual growth and re-education process. The staff working with TTVN have developed new skills to meet the challenges of TTVN technology. These skills could be further developed through formal coursework.
14. Take action in a consistent manner

A management priority should be to make sure that everyone has a clear picture of how to continually work toward improved quality. The Plan, Do, Check and Act cycle (PDCA) insures a gradual transformation. Step 1 involves studying the process. Teams are organized to determine information needed to assess the situation and to plan change. At this point a plan is developed. Step 2 involves a small scale assessment of the change. In step 3, team members look at the effects by asking the question, "what have we learned?" A decision is reached in step 4, at which point either the test is repeated in a different setting, or a new cycle based on the accumulated information is initiated.

TQM and Education

Success in education is measured by the quality of information that flows through the technology and benefits those at the other end. The goal of education is to provide the learner with a set of cohesive skills that are useful in and to the larger society. The quality of education has been measured in a long-term and interim objectives rather than short-term gain (Klinger & Connet, 1992). Quality can be part of any educational plan and must be considered when innovative technologies are used for instruction (Moore & McLaughlin, 1992).

Educational telecommunication promises to be a tremendous tool in enhancing educational opportunity, even while the technology remains dependent upon content and interaction between the instructor and student. A posed challenge is to provide quality instruction using a telecommunication system. For success, the quality challenge must be addressed at each point of human contact, from technical transfer of sounds and images, to administrative facilitators, and finally within instructional presentation. Several levels of personnel must be included in this achieving goal, from administrators to instructors and support personnel. The task is compounded by the extensive structures surrounding each of the job functions, so that the individual responsibility to TTVN is often a minor part of the total operation.

Training Model

Self-assessment has been attributed as the key to implementing total quality assurance. Using three components of customer orientation, process awareness and statistical control, Texas A&M could implement a state-of-the-art training program for the innovative two-way telecommunications system.

Self-assessment occurs when natural curiosity develops about the organization and what it is trying to assess. Developing a teamwork approach and mapping evidence of future quality assurances are outcomes of the process. A proactive approach of asking questions about how systems work instead of making demands about why they don't work is a difference in the process of implementing positive change (Davis, 1992).

There are several pitfalls with any new program and it is easy to get caught up in "the rituals of continuous improvement without asking the larger question of to what end" (Leibman, 1992, p. 35)? Seven major pitfalls can be avoided with planning and vigilance. Be aware that quality efforts and bottom line profits are not immediately noticeable. The quality process takes longer because of the personnel involvement and therefore it is not a quick fix for any organization (Walton, 1986).

When executives or managers attend a seminar on Total Quality Management (TQM) they want it put in place immediately. The first efforts to implement the ideas can fail if the principles of quality assurance are not tailored to the company, the existing culture and the industry. Training each person to do the job and to understand the process are keystones to the TQM according to Deming (Walton, 1986). However, the focus must remain on results. Concentration can shift from measuring success in terms of the number of people trained instead of improved quality (Leibman, 1992). The constant question must be "to what end?" Measurement of customer satisfaction must be a goal or changes are made arbitrarily, with customer satisfaction used as an excuse. Several means of statistical analysis are commonly used to assist in clarifying the problem areas. The resulting computer runs, charts and graphs can confuse rather than illuminate if the questions are ill-formed. It is easy to "substitute data for analysis and measurable activities for substantive information" (Liebman, 1992, p. 36). After initial success where permission was given from above, continuing efforts toward quality improvement remain on the technical level. The climate or operational structure returns to "normal", or the status quo which is more comfortable and less open to change efforts. The teams do not learn how to address the organizational factors that keep the channels of communication open, so continuous improvements crumble which raises doubts. The team effort must also be supported on the reward end. Conventional incentive programs focus on the employee pleasing the boss, where the TQM approach is organized around specific tasks. New incentives and employee reward systems must support the TQM teams or the drift back to the status quo is inevitable. No one changes overnight and the need for approval is strong. The old habits of looking for hierarchical decision-making are hard to break. Often there is frustration until new replacement skills are learned.

TQM cannot succeed as a staff-driven program, rather it functions best as part of the overall plan. Each of the team leaders must work to clarify issues. Without clarification, a symptom may be addressed rather than getting to the problem. Two basic questions must be analyzed for success. "How are we going to achieve the goal?" and "What organizational structures will promote the achievement and how much change will this involve?" Focus and continual progress toward defined goals contribute to the overall success of the individual and the organization (Liebman, 1992).

Application to TTVN

This quality assurance training model is based upon staff experience, research results, informational surveys and instructor comments, which are the currently used pathways for information. However, within the proposed model more avenues for direct, quantitative feedback are provided, which will enhance self-assessment process. Self-assessment has been recognized as the key to implementing total quality assurance and occurs when natural curiosity develops about the organization. Developing a teamwork approach and mapping evidence of future quality assurances are outcomes of the self-assessment process. A proactive approach of asking questions about how systems work instead of making demands about why they don't work is a difference in the process of implementing positive change (Davis, 1992). Using three components of customer orientation, process awareness and statistical control, Texas A&M could implement a quality training program for the innovative two-way telecommunications system.

Components

The major components of the instructional process using TTVN for instruction have been listed as technical, instructional, environmental, training, administrative and evaluative (Spillane, 1993). Of these, the areas of overlapping interest to personnel at TTVN include technical, logistical or environmental and administrative components. The major question asked within the technical area is whether the equipment is optimally functioning to support instruction between the sites using the TTVN facilities. Environmentally, the major question is whether the room is conducive to maximum learning for the specific needs of the students using the equipment. Administratively, the primary question for TTVN support personnel is whether the users know who to contact where and for what services.

The instructors saw training about the system and how to use it as separate from the class instruction. There were three major points of contact between TTVN training staff and instructors.

Training Component

1. Pre-Class Training	Equipment capabilities
2. Technical Assistance	Throughout the course
3. Remote Site	Personnel and technical support

The operational quality of the audio and video was the major concern to TTVN technical personnel. A hallmark of quality would be the transparency or lack of awareness by the customers (students) toward the TTVN system during the instructional sessions.

Technology Component--instructional support between sites

1. Equipment	Contact and Communication--initial link
2. Interface with class	Message control-- audio-visual clarity, and camera

To instructors the environmental component involved interaction within the department and relationship with colleagues and co-workers. To the staff at TTVN the major concern included the immediate logistical problems associated with the sites.

TTVN Logistical Concerns--a maximum learning environment

1. Room arrangement — Interaction with each user
2. Equipment functional — Monitor for problems
3. Connection made — Computer check before scheduled class
4. Resource — On-call

This directs the TTVN staff into the administrative areas over which they have responsibility. These include the scheduling of conferences and classes even at other sites, the maintenance of the TTVN classroom areas as well as the TTVN equipment and the administrative access to the classrooms.

TTVN Administrative Concerns--Users have contacts

1. Conference scheduled — Pre-Class
2. Support personnel awareness — On-going training
3. Technical support available — List of problem-solution contacts

The question remains as to how training can be integrated within each contact point. Using the quality model, a first step would be to develop a group to implement a total quality management program. Hopefully, instructors and students as internal and external customers would be included in such a group. This quality assessment group would then plan ways of using the accumulated data to structure questions targeted at resolving problems. In providing quantitative information in the technical, logistical and administrative areas, available graduate students could be used to chart the daily technical performance of the equipment. This would provide a more complete base of information within the budget constraints. In a gradual cycle of research and implementation, the results of the group would extend to other centers, making TTVN an increasingly user-friendly network.

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Organizational Chart Inversion Facilitates Use of Personnel's Multiple Talents

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Typically, the structure of a business organization is depicted in an organizational chart which serves as an illustration of the formal arrangement of roles and relationships. The structure of any organization should be designed to facilitate the accomplishment of its specific objectives. Rather than using a predetermined organization structure, the company should create a structure which will propel it toward the accomplishment of its goals.

Organizational charts are not only reflections of how the entity functions, but they also serve to guide and direct action. Both implicitly and explicitly they define power within the structure. Interestingly, although the organizational chart is designed to show personnel placement, it may not be designed to maximize the capabilities of all employee talents.

Thurstone (1935, 1947), Guilford (1964), and Taylor (1973, 1986) pioneered study of the identification of multiple talents within individuals. This concept has appropriate application in the personnel issues of today. Increasingly as fiscal resources tighten, wise managers recognize the critical need to extract and utilized maximum potential from personnel. While an individual may have been hired primarily for his or her expertise or ability in a specific area, wisdom suggests that all talents which that individual possesses should be utilized.

Most of the theoretical framework in the area of multiple talents was developed by educational theorists and practitioners. Yet, the application of the principles is readily adaptable from the classroom to the workplace. Taylor originally classified talents into six categories: academic, creative, planning, communicating, forecasting, and decision making. He later expanded that list to include implementing, human relations, academic, productive thinking, discerning, problem solving, forecasting, decision making, and communicating. He recognized that individuals vary in normative rankings in their relative positions with regard to multiple talents. He stated, "When teachers become structure-setters for different talents, they discover that nearly all students are above average in a least one of the many talents." Later he added: "Teaching for multiple talents, therefore, offers the best hope of systematically reaching each and every student in our classrooms and of finding promise in everyone from all parts of society" (Taylor, 1975, p. 101). This concept fits well with the need to develop and use fully the capabilities of all personnel.

Such an orientation can also greatly affect self-concept. Taylor (1973) suggested, "Teachers can be richly rewarded by esteeming students not merely as learners and knowledge reproducers but much higher as thinkers and producers, doers, decision-makers, communicators, forecasters, creators, composers, planners and designers, marshallers and cultivators of resources, organizers, implementers, leaders, etc." (p. 102). These talents, needed by employers, can be unleashed in all personnel in varying levels.

Hunt (1971) compared the opportunity of a teacher to aid in the development of multiple talents to that of the manager of a mining operation. This applies to development and utilization of talents in personnel equally as well. The original purpose of the mining operation was the extraction of copper ore. Later, it was discovered that the silt stream produced was rich in recoverable gold and other metals. Thus, with little additional cost, the miners were able to gain much more. Similarly, if the organizational chart and climate are designed to utilized multiple talents, personnel are enabled to contribute much more.

The ideas of Taylor and Hunt were preceded by Thurstone (1935, 1947) and Guilford (1964). Looking beyond the intelligence test to discover and measure additional mental abilities, Thurstone gained the first scientific insight of multiple talents as he identified over twenty. Guilford later developed in his "Structure of Intellect" model a periodic table of the mind suggesting 120 talents.

In his work dealing with the coordination of teaching methods with student characteristics, Hunt (1971) reflected: Some of man's greatest inner powers and resources are his multiple high level talents. A major challenge is how we can teach people in classrooms to use more of their brain cells and pathways, i. e., more of their brain talent processor and thus more of their potential talent powers. For example if a young person learns repeatedly how to turn on his creative processes, then he will likely use these processes throughout his entire lifetime as a main resource in his living and functioning effectively (p. 10).

It is this ability to teach people to turn on and use their creative processes that is germane to personnel issues. To accomplish the task of allowing personnel to utilize life-tasks, personnel officers need to look to new methods of organization. Alfred Binet in 1909 reproached the educational methods of his day for stressing memory almost exclusively which resulted, he felt, in lack of curiosity, tendency to seek truth solely in books, indifference to the environment, naive beliefs in the omnipotence of formulas, and lack of adaptations to contemporary life.

Taylor's (1973) suggestion of a student centered approach has application. Taylor suggested focusing upon talents and becoming talent developers. Teachers, and therefore personnel structures could change their roles to be igniters of talent, catalyzing, cultivating, and developing a variety of world-of-work talents in people.

Typical organizational structures may reflect divisions based on function, product, geographic or customer groupings. Powerful organization leaders are shown at the top of the diagram with other personnel falling below in a pyramidal structure. While common, such organizational representation may not adequately capitalize on the power within personnel.

Organizational charts identify and create the basic framework of formal relationships. Organizing, through identifying relationships and linking people and tasks into a hierarchy, creates a power structure. The organizational chart often represents a chain of command founded upon authority. Additionally formal relationships operate in conjunction with informal culture. Organizational culture is created through the shared beliefs, expectations and values of employees. Organizational culture establishes expectations and norms that shape individual and group behavior. These are intimately influenced by and intertwined with the organizational structure. Guided by how the organizational chart is viewed, the development of a strong organizational culture can greatly effect the organization's affect on multi-talented personnel performance.

Change to Capitalize on Multiple Talents

Brown (1991) recently wrote, "The most important invention that will come out of the corporate research lab in the future will be the corporation itself . . . . It must design the new technological and organizational architectures that make possible a continuously innovating company." (p. 102). Similarly, Gibson (1987) contended that a commitment to quality requires a change in organizational structure by changing the relationship of managers, subordinates and peers; building common visions and goals; increasing delegation to the lowest practical levels, developing understanding, openness, and trust; and increasing the quality of individual and group thought processes and contributions.

Historically, organizational structures have maintained rigid hierarchial forms. Naisbitt (1982) cited the pyramid structure as the way civilization has organized and managed itself. "From the Roman army to the Catholic Church to the organization charts of General Motors and IBM, power and communication have flowed in an orderly manner

from the pyramid's top, down to its base; from the high priest, the general, the CEO perched at the very tip, down through the wider ranks of lieutenants and department managers clustered in the middle to the workers, foot soldiers, and true believers at the bottom." (p. 189) Naisbitt (1982) reported that the failure of hierarchies to solve society's problems has forced people to talk to one another and develop alternative organizational structures. Ramundo (1991) suggested that the classic management pyramid is being replaced by the development of relationships, rather than managerial structures, as the key to obtaining results.

Organizational Chart Inversion

To maximize the tremendous talents of personnel, the organizational chart should be viewed "up-side-down". The traditional organization chart should be inverted such that it shows each succeeding layer as supporting the one which was previously below it. Managers and executives would be depicted as facilitators of success. Thus, rather than illustrating the power of management, the chart serves as a reminder and model for action which is respectful of the tremendous power and capabilities of employees at all levels.

By looking at the organizational chart "upside down", personnel will be encouraged to change their view of responsibilities, to see opportunity for contributing their multiple talents. This mission-oriented organizational chart matches organizational expectations with objectives to create success. By elevating, or recognizing, the status of all employees, all can drive the business; personnel are propelled by supportive management rather than pulled; and people are empowered to succeed rather than being told to do so.

This empowerment was referred to by Gutierrex and Bambly (1990): "From the organization's perspective, empowerment is the process of putting appropriate authority to act on behalf of the customer in the hands of those nearest to the customer . . . . When the organization empowers employees and they are willing to act empowered, the customer will experience the very best service." (p. 25)

INC.'s "Organization Chart of the Month" (1991) highlighted Nordstrom's version and application of this principle. Noted for their service reputation, Nordstrom's utilized an inverted pyramid structure depicted with hands drawn to show support for each layer. At the bottom of the chart the Board of Directors' hands reached upward to support the store managers, buyers and merchandise managers. These managers, in turn, reached upward to support department managers. Department managers reached to support sales and sales support people, who in turn reached to serve customers. Customers were at the top of the organizational pyramid in the position of power.

Recently, a lecture was given by a prominent CEO. While the topic was interesting, more intriguing was the entourage he brought to support him. While viewing his writer, audio-visual specialist, statistician and others who were there to make "the boss" look good, one wondered what he did to make his subordinates look good or to further a team effort. An inverted organizational chart causes officers, managers and administrators to see themselves as facilitators of the success of all personnel. They are empowered to use their talents to further the team effort. The role of the leader becomes "What can I do to help achievement. This orientation ultimately brings success for the organization because at all levels needs are being addressed.

Consider the difference in the terms "report to" vs. "responsible for". Beyond obvious advantages of utilizing more totally personnel resources to accomplish goals, in the latter, personnel are given respect for the use of their talent to accomplish assignments for which they have stewardship. Given the opportunity and supported to succeed, personnel will feel better about their accomplishment. Such facilitation of employee success may increase retention, reduce absenteeism, and increase productivity.

While many companies operating under traditional hierarchial organizational structures seek to improve quality with elaborate presentations to top level executives, multiple talent use offers an enticing alternative. McLaughlin (1985) referred to the practice

of placing the latest quality book in the hands of key people at the top of the organizational chart, then waiting, expecting something to happen. Instead, an inverted organization structure would empower and prompt personnel at all levels to be aware of quality needs and provide services and products to meet those needs.

Each step of the way, employees can be empowered to use their multiple talents to achieve the goals of the organization. By altering the way an organization views its structure, even if only as an exercise, it opens the door to greater utilization of its personnel resources. It opens the door to utilization of multiple, rather than singular, talents.

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Successful Technical Managers: A Question of Value

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Technological organizations and the individuals who perform for them have revolutionized human possibility in this century. Individuals in organizations have engineered and managed radical changes both in technical systems and the human systems which develop them. Those individuals are expected to assume both a technical expertise in solving problems for which they have been trained, and a responsibility for managing others for which they have not. Engineers are required to take on the problems, policies, and management of organizations without the preparation that more liberal disciplines offer. In order to maintain the alignment of purpose which a quality driven organization requires, technical companies must begin looking at better ways of developing their engineers into successful managers..

However, in spite of the increased emphasis on developing technical managers, management development programs do not appear to be connected with successful management outcomes. Nonetheless, it is still obvious that some managers have been effective managers. What then, have been the contributors to their success? What have been the interpersonal and organizational transactions and events which have influenced successful outcomes for these managers in spite of the handicaps? Those are the question I attempted to answer in my doctoral research last year.

Few studies are grounded in the experience of successful managers. Even fewer examine the contributors to management success as perceived by successful managers themselves. The dissertation research attempted to determine the contributors to the success of technical managers who had begun their careers with engineering backgrounds focuses on the question " How do engineers become successful managers" from the perspective of the managers who have already achieved successful outcomes and strong working relationships.

The contributors to management success occur in context. Most research has been based on assumptions which have not addressed the manager in context or managers' perceptions of how their contexts have affected their development. Management development has been guided largely by competency based notions which have directed curriculum without being confirmed by research or identifying the contributors to the success and the rapidly changing contexts in which they occur.

For example, Hawkins and Barclay (1990) addressed the changing nature of the engineering managers' world when they noted that all engineering graduates are expected to move into a managerial position at some time in their careers. A survey of employers hiring engineering graduates listed the following factors considered for managerial promotion in order of importance: people management, communication skills, track record, interpersonal skills, technical awareness, project leadership, personality, profit/efficiency, innovative skills, and training undergone. Hawkins and Barclay note "These results match those found in another of our surveys which investigated the activities, problems, and needs of established technical management. We found that by far the worst problem reported related to the management of people."

The research reported by Barclay and Hawkins indicate that companies emphasize technical expertise when hiring, while recruiters emphasize technical and person qualities. Companies promote to technical managerial positions with a new emphasis on personal and managerial qualifications for which applicants have not been prepared.

Technical Competence and Interpersonal Skill

"What is needed is a shift in management education pedagogy and organizational climate that raises the importance of successfully working with others to the same level as that currently granted to the mastery of disciplinary content. Current offerings of one or two courses in organizational behavior in most programs are not enough to overcome the competitive "kill or be killed" mentality that many students bring to the classroom." (Fry and Passmore, 1982)

Many courses in technical training programs which do focus on interpersonal relationships are perceived as unimportant. Fry and Passmore (1982) warn
"Without a major shift in pedagogy that cuts across disciplines and removes attention to interpersonal relationships in special courses from the 'nice to think about once in a while but probably unrealistic' category we will continue to produce interpersonally unprepared executives who try to gain cooperation through intimidation and later question why they are not liked or respected by those they must rely on for their success and generativity as organizational leaders.

Cultures Which Allow Managers to Develop

Management situations are not universal, and managers re diverse people with differing collections of abilities who define the management task while they are performing it in an organizational culture even as it evolves. Greatrex and Phillips (1989) underscore the importance of culture in defining effective management. Group effectiveness, like management effectiveness, is not guaranteed merely by the presence of a high level of competencies in individual members of the group, but rather by a culture and climate which allows them to be responsive to outside influences.

Individuals are frequently unable to comment or address the ambiguity in organizations which permit conflicting messages to occur.

Members of such dysfunctional organization are not able to communicate about the mixed messages and thereby limit relationships, communication, and trust. This cyclical dysfunction prevents individuals from taking risks, and encourages further defensive actions destroying the effectiveness and learning climate (Argyris, 1977).

Findings

Findings were extracted from experiences reported by twenty high level technical managers interviewed for the study. Since all but three managers began their careers as engineers, the findings describe how a management role is developed from an engineering background. Managers listed their life experiences as their most valuable learnings in preparing them to manage well. Managers learn from life experience how to be better managers. Prior learnings shape the frame from which they operate as managers.

Those learnings focus on people-valuing attitudes and behaviors which are honed outside the organization and learned in early family settings.

Managers learn from early home training, from their roles in social organizations and in the workplace to develop their values, strategies and experiences in order to achieve successful management outcomes. Surprisingly, findings in this study suggest that managerial success is based not on what managers may have learned experientially, or on the job, as one might expect, but on what managers have learned previously. Managers do not put prior learnings and values aside as they acquire new knowledge and construct meaning, but integrate earlier knowledge, skill, and values into the context of their managerial practice and experience.

The attention to consideration and respect for others in the workplace was not seen as a competency, but as a philosophy. The ability to relate to others authentically was not seen as a "way of doing" but as a "way of being." While these learning experiences were

totally out of the context of their managerial role in the workplace, managers were able to make use of a substantial transfer of ability and knowledge from these informal, social, experiential learning opportunities. Managers cited their most beneficial leadership experiences as coming from outside the organization without benefit of formal recognition or sanction. The process describes an informal system of utilizing community and social organizations to develop managers for business organizations in ways which are not formally acknowledged in the workplace.

Managers in this study operated from values they learned in childhood which had been rubbed into their life fabric. As adult managers playing "life by ear" largely without formal training in interpersonal relations they persisted in the conviction that "valuing people" and "treating others the way you would like to be treated" was an essential management philosophy. The old personal values and basic moral codes were integrated to provide a basis relationships and self perception. This finding is also supported by research on decision making patterns of corporate CEOs in which executives reported a dependency on a core of personal values and intuitive know-how to operate effectively as decision makers (Harvey, 1985).

A Personal Value Model
(A Smaller Role For HRD)

Managers interviewed in this study interacted with others from a people-valuing belief system, reflected on the effects of their interactions, and acted on their reflections. The results of this study suggest that successful managers act on personal value driven actions based on beliefs embedded at an early age. The implications of such a finding have strong reverberations in the field of Human Resource Development. The essential question is "Can such characteristics be taught?" Is it possible to teach managers to care about others? To be authentic? If, in the words of one manager, "People are not dumb; they know when you are sincere", is it a futile expectation for HRD professionals to encourage managers to portray human characteristics which may not be genuine in an effort to improve workplace relationships?

Both A Personal and Organizational Value Model

Managers in this study have attempted to identify elements leading to success in their managerial practices and learnings. Those value based attitudes and learnings include a high regard for others, the ability to communicate it effectively and authentically, and the willingness to integrate those values and practices into the organizations they manage. The model for relationships between managers, their team members, and their organizations is simply "know who you are; say who you are; be who you say you are." This value driven model is not unlike Argyris' concept of Model II thinking which serves both the individual and the organization when it integrates what managers believes in theory with the actions they take in practice.

Multiple Roles

There are two major issues critical to management development and the future of HRD professionals. They are the scope of the discipline and the role professionals must play within its framework. The results of this study suggest that the framework for success for technical managers as well as professionals attempting to contribute to their development in today's organizations must extract multiple learning experiences from multiple providers, resources, and events which may contribute formally or informally to management success. In that context, it is necessary for the HRD professional to address the individual both in the role of a manager responsible for producing outcomes in an organizational setting, and in the role of an individual who learns the necessary skills from a variety of sources inside and outside the organization.

Implications for Training HRD Professionals
(Changing faulty assumptions)

Trainers and developers must reassess the assumptions which have shaped their own practice and reflect on what is working in the field as it is occurring. If traditional management development activities have failed to provide successful outcomes, it may be because paths and expectations of managers, organizations, and Human Resource Development professionals are not congruent. Management development will only be successful if all strategies and expectations are aligned. Such alignment is not possible without a respect for the personal growth of managers as individuals. In turn, managers themselves must assume the role of developers of people as well as managers of outcomes. HRD professionals must become designers and managers of experiences which contribute to the success of individuals who make management decisions. In order to perform the evolving HRD role, professionals must be prepared to become involved in strategizing training to support corporate strategy. Such a "free for all" atmosphere in which participants design their own learning experiences is not a traditional process. The concept of collective competence requires that the manager be able to recognize and relate to the team on its behavior as a group while simultaneously being aware of each member's talents, needs, and performance. Such a mutually self-developmental model is based on the same feedback, trust, and participation that managers in this study valued as critical to their own success.

Questions for Future Research

One question not answered by this research addresses the relationships between values as they shape the actions taken by individuals to promote certain outcomes. What organizational values are necessary in order for managers to act on the organization's behalf? How can organizations recognize and align with the values already practiced by successful managers? These questions address the future use of knowledge as it shapes evolving paradigms in organizational management. These are notions of empowerment and motivation which translate thinking into doing. What does it take to get people to move on what they believe to be a true and just way of action? What does it take for people to empower themselves to act, to incarnate the idea? Such questions are built on the relationships between cultural judgment, moral duty, and action to change the human condition in an organization, an institution, or the world. Those questions are necessary to move principle centered, value driven management into the limelight of American industry.

Evaluation For the Bottom Line: The Key to Enhancing Program Quality

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The Need for Training Evaluation

1. Accountability
   * Training is a $40B industry.
   * Among the biggest investors in training are IBM, GE, Motorola & Xerox.
   * Training should justify investment cost.
   * Economic instability warrants accountability.

2. Setting Priorities and Optimize the Use of Dwindling Resources
   * Helps provide decision support to management.
   * Shows utilization of physical, human, and capital resources.
   * Provides data for cost vs. benefit analysis.

3. Relevancy and Appropriateness
   * ASTD says at least 75% of all workers will require formal retraining by year 2000.
   * Constant changes in technology, job design, and nature of workforce warrant skills upgrading.

4. Measuring Impact of Training on Performance and Productivity
   * Management is concerned with effect on the bottom line.
   * Long-term economic justification.

5. Assessing Program Quality for Continuous Improvement
   * Modify, revise, eliminate, install, and improve quality of training programs.
   * Involves determining whether objectives, materials, facilitators, strategies, etc. were appropriate.

The Measurement of Continuous Improvement (MCI) Model

The MCI Model, as shown in the next page, is the methodology used to evaluate a selected training program in a Fortune 500 company. Although the model was customized for the client, it can also be utilized for training evaluation in all types of organizations.

Kirkpatrick's Levels of Evaluation

The classic four-step Kirkpatrick approach was used to determine the appropriate research design, collect evaluation data, and conduct statistical analysis. This framework encompasses the basic purposes of training evaluation, including effects on the bottom line. The four levels of this model, along with the questions they attempt to answer include:

1. Level 1 - Reaction

Did the participants like the training?

2. Level 2 - Learning

Did the trainees learn the concepts and skills during the program?

3. Level 3 - Behavior

Did the training result in behavioral changes in the workplace?

4. Level 4 - Results

Did the training impact the organization's goals?

Evaluation Design

The following research designs, including the subjects, instruments used, and the type of analysis conducted, were utilized by this study:

1. Level 1 - Reaction

   * Descriptive Analysis
   * The Reaction Evaluation Form Using Likert Scale and Open-Ended Comments
   * 31 Participants (Two Programs)

2. Level 2 - Learning

   * Pretest and Posttest Single Group Design
   * Program Pretest and Posttest
   * 99 Participants (Four Training Locations)

3. Level 3 - Behavior

   * Pre- and Post-Training Control and Treatment Groups
   * Skills Behavioral Indicators
   * 11 Subjects Each for Control and Treatment Groups
   * Administered to Subordinates, Peers, and Managers of Both Groups

4. Level 4 - Results

* One-on-One Interview with Training Stakeholders
* Content Analysis
* 10 Managers and Directors

Pilot Study Evaluation Results of a Leadership Program at a Fortune 500 Company

Using the research designs identified above, the following pilot results were generated from the study:

I. Reaction

* Excellent ratings (higher than 4.50 on a 5.0 scale) to 6 out of 13 evaluation items, including overall program quality. The other 7 were rated very good.

II. Learning

* Overall mean pretest and posttest scores are 45.7% and 80.1%, respectively, with higher pretest mean scores for Midwest and Midnorth locations. South posttest mean is the lowest,but there was no significant difference on percentage gain scores among training locations.

III. Behavior

* Two (out of 14) behavioral indicators showed positive improvement for treatment group. One behavior indicated a small negative change and 11 revealed no significant change.
* There was no significant difference in responses of subordinates,peers, and managers.

IV. Results

* There was no direct link between training objectives and company goals but the training program was considered as appropriate and well- taught.

Recommendations and Conclusions

The following recommendations and conclusions were generated as a result of this pilot study.

* Conduct a thorough question assessment to establish link between training objectives and company goals.

* Analyze the objectives of the training as identified by program designers.

* Identify and categorize project stakeholders into major and minor.

* Use Kirkpatrick Model for research design.

* Use variety of data collection strategies, including multi-perception technique.

* Minimize halo effect by conducting evaluations to same subjects at least three months apart.

* MCI Model is very systematic and easy to use.
* Use tangible results for Level 4 evaluation.
* Develop quality benchmarks for each training program conducted.

Concepts and Issues in Developing Quality Workforce Literacy Programs

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Workforce literacy is a subject of national concern and debate. With estimates of 20 to 80 million American adults defined as functionally illiterate (Ford, 1992), reports of $300 billion in annual productivity losses due to literacy related issues (Gordon, 1991), and with predictions of a 20% shortage of skills workers in the year 2000 (Johnson and Packer, 1987), lack of strategic planning in the area of basic skills training could be detrimental to our nation's productivity and ability to compete on a world-wide basis.

Yet workforce literacy programs are still too few among the majority of U.S. companies. Granted, there are many notable efforts, such as Polaroid's basic skills program dating from 1969 and IBM's generous donations towards the cause, yet estimates show that all existing literacy programs--government, business and private--only meet 10-15% of the problem (Business Council for Effective Literacy, 1989). This situation is further exacerbated by the lack of dependable information on the subject. A review of the literature show inconsistent implementation models, insufficient data on success/failure factors, and an even more appalling dearth of information on program results.

With this in mind, during the summer of 1992, we designed a qualitative research study to gather and synthesize data concerning key concepts and issues in implementing a quality workforce literacy program.

Research Questions

Two questions were of primary concern: 1) What are the key steps required to implement a quality workforce literacy program? 2) What are the success/failure factors related to workforce literacy programs?

Definitions

Much discussion has centered around definitions of literacy. The terms "*functionally illiterate, marginally illiterate, totally illiterate, workforce literacy*, and *workplace literacy*" have been used in a variety of ways and have even altered in their meaning over time (Chall, 1987; Gordon, 1991; Ford, 1992). For the purposes of this paper, we will concentrate on the terms *workforce literacy* and *workplace literacy*.

Workplace literacy refers to the basic mathematical and communication skills (reading, writing, and interpersonal communications) required to perform the current job successfully. This is obviously situational based on the skills required for a specific job. *Workforce literacy* encompasses the same definition, but takes it a step forward to a more strategic level. With workforce literacy, a company is also ensuring employees have the skills to perform future jobs. Future jobs may entail promotions, job redesign and/or the introduction of new technically-sophisticated equipment.

In terms of preparing for the workforce of the future, the definition of workforce literacy is more desirable than workplace literacy. The nature of work is changing as jobs become increasingly complex with the addition of new technology and performance expectations that include teamwork and participative decision-making. This is substantiated

by the estimates of the U.S. Department of Labor who report that by the year 2000, only 27% of all new jobs will be considered low skill compared to the 40% figure of today (Gordon, 1991). Granted, workplace and workforce literacy need to be specific to a company's work needs, but by planning strategically for *workforce literacy*, a company can help to insure that the training they invest in today will continue to pay off in the future.

Methodology and Analysis

The qualitative methodology included a combination of document analysis, interviews, and observation. All three methods were employed in order to increase validity through triangulation, as well as to check for consistency (or inconsistencies) in successful program implementation. Through the use of the three methods, we found consistent patterns emerged in terms of preferred implementation models and success/failure factors.

The purpose of the document analysis was to analyze existing implementation models for workforce literacy programs and to synthesize these into a generic model and/or key concepts--based on quality program results. Quality programs, for our definition, included programs that achieved pre-set learning outcomes, maintained high attendance rates, matched corporate goals, and resulted in positive employee and managerial perceptions after implementation. The document review involved analysis of twenty (20) articles in which we found eight (8) different workforce/workplace literacy implementation models. The eight models advocated a variety of different implementation steps, ranging from five to thirteen steps.

The document analysis was supplemented by a series of interviews with five (5) corporations which had implemented workforce literacy programs and six (6) literacy consultants or suppliers who specialized in implementing workforce literacy programs within corporations. The size of the corporations ranged from 400 employees to 64,000 employees and included state, national, and multinational companies. The literacy consultants and suppliers were from both state and national groups, and specialized in providing literacy tests and curriculum, as well as computer-based training programs for literacy.

Two sets of questions were developed. Question Set A (see Figure 1) was designed for interviews with corporations to gather information on specific implementation steps or model recommended and success/failure factors. Question Set B (see Figure 2) was developed for the literacy consultants and suppliers. Its main purpose was to gather information on implementation steps to use in conjunction with their product as well as to collect cost data. Some of the interviews were conducted via telephone, whereas others were in face-to-face meetings or conducted during site visits.

In addition, document descriptions of four (4) other corporations who had successfully implemented workforce literacy programs were analyzed according to Question Set A.

Finally, observations of two workforce literacy classrooms were conducted. The observations were a result of telephone interviews with corporations responding to Question Set A. The corporations invited us to visit the site and observe the literacy classes in session. This provided invaluable data in terms of observing the training step apparent in all workforce literacy implementation models.

Findings

The data from the document analysis, interviews, and observations were coded and synthesized in order to identify common patterns and/or inconsistencies in information related to the two research questions. In almost all cases, common patterns emerged, with the exception of lack of information on failures in the literature review. Descriptions seemed to concentrate on successes; whereas in the interviews, corporations and consultants readily volunteered information on failures, with additional advice on how to avoid them.

Findings on Recommendation Implementation Steps

Both the interviews and document analysis resulted in a variety of different implementation models, or variations upon models. Therefore we concentrated on identifying the critical steps common to all models and the steps identified by the interviewees as being critical to successful program implementation. This resulted in the discovery of eight critical steps or components for successful implementation. These are: 1) Recognition of Need, 2) Assessment and Verification, 3) Sponsorship and Goal-Setting, 4) Job Audit, 5) Curriculum Development, 6) Implementation, 7) Evaluation, and 8) Continual Communication. The above steps are listed according to order of implementation. The data also showed that in terms of importance, Sponsorship and Goal-Setting, Job Audit, and Curriculum Development were the most crucial.

1) Recognition of need is generally illustrated by an event that causes someone within the company to realize that there is a potential literacy problem. This could be poor employee performance in terms of scrap rate or other quality/quantity measures, increased absenteeism, lack of skill attainment on a new piece of equipment, and/or the introduction of a new program, such as skill-based pay systems or statistical process control. Often a supervisor will notice the change and investigate, or employees may report job difficulties to a human resource representative.

2) Assessment and verification of the event described above needs to take place. In some cases, it may not be a literacy issue. Normal performance analysis or process consulting measures should be employed first before automatically choosing a literacy assessment technique. Once the problem has been identified as one of literacy, then the selection and administration of a literacy assessment technique should be take place. This could be one of a multitude of literacy tests on the market, such as the TABE, CASAS, or ETS literacy tests. There are also informal methods that agencies specializing in literacy can implement.

   Our research findings showed no one literacy assessment technique as being the preferred technique for workforce literacy. Much of the choice depended on the type of work the employees performed in the specific corporation. Though one common finding was that many corporations did seek--at least initially--the assistance of an outside agency to conduct the assessment and verification stage. Choices included literacy consultants, supplier, agencies, local community colleges, and federal grant programs.

   Most of the findings advocated for employees to volunteer to complete the assessment, though a few companies made it mandatory that all employees complete it.

3) Sponsorship and goal-setting was identified as one of the most critical steps to successful program implementation. Much of the literature and especially the interviews with corporations emphasized the importance of this step. Sponsorship included gaining top management support to implement the program. In almost all cases, to obtain this support, management required that the literacy "champion" provide statistics and percentages verifying the extent of the problem and a recommended implementation plan. Sponsorship also included gaining the support of first line supervisors and employees as well. To obtain this, they advocated much positive communication of the program in the form of small meetings and one-on-one settings, as well as inviting supervisors and employees to participate on the implementation team.

Once sponsorship is obtained, management should be included in the development of goals for the program. The corporations advocated asking for a long-term implementation plan of at least three (3) years, since productivity on the job as a result of literacy training often take more time to be verified, though individual test results can show almost immediate progress. This type of information should be taken into account when setting goals for the program. The goals and the result of the job audit will then provide direction for the rest of the implementation steps.

4) The job audit includes an evaluation of jobs performed by the targeted employees. This step involves job analysis, reading and math level calculations, and examination of future job tasks for higher level skills. The audit should include observation as well as analysis of job descriptions and interviews with supervisors and management.

The job audit is the critical step that links the company goals to the literacy program. The information gathered here must be used for curriculum development.

5) Curriculum development is another important step in that selection or development of material which is not job-related often results in high drop-out rates and low correlation of improved job performance with literacy training. Most companies advocated developing or customizing vendor materials to meet their specific jobs needs. Several suggested that involving the employees in the curriculum development process assisted in gaining sponsorship and endorsement of the program by the employees and supervisors. An issue here was access to employees on company time.

Overall, using a variety of learning mediums, not just one, was recommended. This could include use of books, computer-based training, flash cards, audio cassettes, videocassettes, and other materials. In addition, the curriculum design should involve both small group and one-on-one tutoring. The average recommended group size was six (6). Large classrooms set-up in a traditional format with the teacher lecturing was not recommended.

Training for instructors was also stressed as an important part of curriculum development. Several companies mentioned that poor instructor preparation was a critical success/failure factor for the program.

6) Implementation involves communicating the program (much of which should have been completed during steps 3, 4, and 5), recruiting, registering, and scheduling participants, providing the actual instruction, and individual counseling of participants on results and progress. All of this involves a committed partnerships between the literacy provider--whether an in-house person or outside agency--and the company supervisors and managers.
It was recommended that small group and one-on-one communication be used as the best means to recruit. Flyers and posters could be used, but they should include colorful pictures and easy-to-read words. Scheduling of training must be determined in conjunction with work schedules, with some time being given from work to attend training. The ideal location for most successful literacy programs is onsite.

7) Evaluation usually involves a combination of comparing pre and post-test results, as well as informal assessments of employee progress provided by both the employee and the supervisor. The latter is usually in the format of an interview. In addition, formal measurement of agreed-upon company indices such as scrap rate, defect ratio, etc. can be measured. The findings suggest that caution be taken in this last area, since many other variable can be attributed to increases or decreases in these types of measurements. This is also another reason for recommending long-term (at least three years) for program implementation and evaluation over time.

Another important evaluation suggestion provided by the findings concerned confidentiality. The data cautioned that confidentiality of individual test results must be maintained by the literacy provider.

8) Continual communication is related to evaluation results, in that the program must be discussed and evaluated on a continual basis for improvement. Revisions to the program should be expected and implemented based on formal and informal evaluation results. Furthermore, the data showed that communication of the results to management in the form of brief updates, quarterly and annual reports, and even newsletters increased program sponsorship and commitment from all parties. Other findings showed that sharing of "war stories" by employees and supervisors helped to maintain and create successful workforce literacy programs.

Success/Failure Factors

In addition to the eight implementations steps recommended for quality workforce literacy programs, the findings showed a list of success/failure factors or "do's and don'ts." All of these should be considered during the planning phase of a workforce literacy program, not after or during implementation. The factors are as follows:

1) **Don't Call it a Literacy Program**. The majority of the literature and all of the interview respondents recommended that the workforce literacy program be given a positive title that does not include the term "literacy." Apparently the term suggests negative perceptions to employees, such as "going to training for people who are dumb and can't read." Obviously this is not the case, as research has shown that many functionally or marginally illiterate people are very intelligent and have extensive support networks to assist them in coping with tasks that require higher levels of reading and comprehension (Source, Date). Some examples of names given to literacy programs are as follows: People in Progress, Process Improvement Communications, Basic Skills Training, Program for Occupational Skills Training, Power Learning, Technology Readiness Program, The Learning Center, Tech Prep, and Skills Enhancement Program.

2) **Expect Initial Resistance and Embarrassment**. One of the most surprising factors to literacy champions is the initial resistance and embarrassment they receive from management. In many cases, the resistance will take the form of denial, such as "we can't possibility have illiterate people in our company." Another common response is one of attack, such as "I want to know who hired them. How did they get in this company in the first place?" These types of responses are common and should be handled by explaining that the problem is not specific to the corporation, but is a common one across the United States. Citing statistics is helpful at this phase.

Another form of resistance is apparent in a pervasive insistence that it is not a company problem, and that the employee should attend night school on their own. Gordon refers to this as a roadblock of "corporate culture that blocks offering hourly workers essential training that may translate into the survival of the American economic system as we now know it (1991, p. 3)." Traditionally hourly workers were easily replaced and therefore were not offered much formal training. Again, statistics are helpful here--recent reports show that the cost of hiring and training (even on-the-job training) for hourly workers has risen to an average of $6,000 per employee (Personnel Management Association, 1990).

3) **Communicate Costs and Benefits Accurately.** It is crucial that clear communication concerning actual costs and type of benefits to be expected are communicated up front ideally during the sponsorship phase Failure to do this can cause early termination of workforce literacy programs by management due to lack of results. Develop cost estimates that show projected costs per year and provide statistics on the types of results expected. Conduct literature reviews of what other companies have done and the results they have achieved. Generally a company can expect to see employees advance one grade level every sixty (60) hours of training (Interviews with 11 Corporations and Consultants, 1992), providing the rest of the recommended conditions, such as onsite training and training during work time are met. Actual improvements in work performance will first become apparent in "war stories" provided by supervisors and employees. These should be communicated as well. Later, after the program has been in place for several years, a company can expect to see improvements in productivity that can be traced to literacy program results. There have been a few isolated cases where companies have seen improvements in scrap and defect rate after six months (Ford, 1992).

4) **Develop a Literacy Team**. The findings consistently showed that a literacy team and champion should be developed to lead the effort. In most cases, membership of the team should include managers, supervisors, employees, human resource representatives, training representatives, and EEOC representative. The literacy champion, or team leader, could be either a corporate employee or an outside consultant. The role of the literacy team is to plan and implement the program according to the eight steps outlined in the literacy program implementation model.

5) **Plan and Coordinate Location and Scheduling Issues.** The findings show that the most successful programs with the highest retention levels provide onsite training and allow employees to attend training during work hours. Amount of training hours per week ranges from three (3) to six (6), with four (4) hours being the most common. Some companies have employed a fifty/fifty share policy, in which they pay employees to attend two hours of training, if the employee will agree to attend two hours of training on their own time. This has worked for many companies, but most recommend going to complete training on company time. Companies that have implemented programs that require employees to attend on their own time have had the highest drop-out rates.

The site of the literacy/learning center should be located on company grounds with easy access. If the center is designed as a multi-purpose learning center for other training besides literacy, it should be located as close to the employee work area as possible. However, if a separate site is being set-up just for literacy, then it should be located where other employees cannot see who is entering and leaving (to avoid embarrassment), but be within walking distance of the work area so employees can stop by at lunch or on breaks.

6) **Determine Grade Verses Competencies Levels.** There is currently much debate among literacy experts on the use of grade levels verses competency levels for measuring results. Most corporations are still using grade levels, because that's how most of the literacy tests are designed. It is also easier to report that a participant advanced two grade levels from 6th grade to 8th grade reading in the last year. A drawback is the labeling of employees as being at certain grade levels and communicating this type of feedback to them in individual counseling sessions. It can be demotivating.

Competency levels are another way to access progress, but require more up front analysis to determine the various competencies required on current and future jobs. Also few literacy tests are designed to test competency levels. Corporations need to be aware of this issue and be able to justify why they chose one system over the other. Except for cases in which a corporation has violated confidentiality and reported individual grade levels of different employees, this issue has not been a large factor in determining program success.

7) **Consider Family Involvement.** Involving the family of the employee in workforce literacy programs has also been shown to be a contributing factor to success, though to date not many companies have included this option. Research has shown that literacy is an intergenerational issue and that in most cases the family of the illiterate employee is also illiterate (Sticht, 1979). Corporations that have included basic skills programs in conjunction with daycare, and/or have invited spouses and children to attend the literacy training have shown high levels of retention and excellent participant morale.

8) **Determine Whether Voluntary or Mandated.** All of the findings point to the development of a literacy program based on employee volunteers. Corporations who had made the training mandatory, usually changed their strategy after absenteeism, tardiness, and low morale increased. Some of the corporations stated that they did have a policy which allowed them to make literacy training mandatory on exceptional cases in which it was validated that the employee had a skill deficiency and it was impacting their work performance. They admitted that this was a very rare case, and that by communicating the program in positive terms, the majority of the employees who needed to attend would volunteer to attend.

9) **Research Legal Issues of Testing and Assessment**. Testing of employees raises many legal issues, and this is also the case with literacy testing. Title VII of the Civil Rights Act of 1991 addresses many of these issues, and cautions against any required testing that is not job related. Furthermore, companies need to be aware of learning disabilities which can contribute towards illiteracy. Accommodation for disabilities, including learning disabilities, is now required under the 1991 revised act. The literacy champion should include an EEOC member on the literacy planning team, as well as supervisors and employees, as suggested early.

10) **Include Staff Development and Evaluation**. A final success/failure factor in literacy programs is staff development and evaluation. All corporations interviewed, as well as literacy consultants advised on the need to training literacy staff; especially the instructors. Hiring elementary school teachers without a background in adult education was a common mistake cited. All staff should be trained in adult education theory, have some counseling background, have the relevant skills to teach the reading, math, or communication skill they were hired to teach, and be very positive and supportive towards employees who participate in the program. Furthermore, process and summative evaluation of literacy staff should take place at agreed-upon intervals. Specific performance expectations should be communicated to staff, and mutually agreed upon development goals set as needed.

Significance of Study

The study provides a unique synthesis of workforce literacy implementation processes based on a set of quality criteria. It also presents a comprehensive list of success/failure factors as perceived by corporations and literacy consultants/suppliers who have implemented programs and encountered these issues. In addition, these findings correspond with other workforce literacy studies of a similar nature which have been conducted in the last year (Kutner et al, 1991; Bussert, 1991; and Mikulecky et al, 1992).

With the increasing realization by government and business that corporate sponsorship of literacy programs is necessary, and the positive publicity received for those corporations which have implemented programs (i.e. Coors), the need for this type of data is growing. By providing additional information on concepts and issues to consider in developing quality workforce literacy programs, the potential for successful implementation of such programs can increase.

Figure 1

Question Set A for Corporations

1. How long have you been offering basic skills programs for your employees?

2. When and how did you discover you had a problem?

3. What steps did you follow in implementing your program? Did you use a specific implementation model?

4. What is the name of your program?

5. Is it voluntary? If not, how are employees identified/recruited to attend?

6. Do employees attend on their own time or company time? What incentives are there to attend?

7. What is the size of the targeted population base? _____Pre-GED _____Post-GED

8. What are the components of the program in terms of instructional medium?
   _____classroom
   _____ videotape
   _____ computer based: TYPE_____
   _____ self-study books
   _____ ESL component
   _____ Other_____

9. What process of test do you use to determine the level at which to place the employee? Why did you choose this test/process? Have you been pleased with the results/accuracy of the test/process?

10. What type of results have you obtained from the overall program?
    _____ increased productivity: TYPE_____
    _____ better test scores
    _____ higher quality
    _____ faster cycle-time
    _____ improved moral
    _____Other_____ ___

11. What is the cost of the program on an annual basis?

12. What advice would you have for a company which is in the planning stage of implementing a basic skills program?

Figure 2

Question Set B for Literacy Consultants/Suppliers

1. What specific services and/or products do you offer for basic skills training?

2. How long has your company been in business? In the literacy training business?

3. What is the average cost of the product/service you offer?

4. If it is a product, such as a test, book, or computer-based training, do you recommend that it be used in conjunction with other training mediums?

5. In your experience, what steps should a company take in implementing a successful workforce literacy program?

6. What advice would you have for a company which is in the planning stage of implementing a basic skills program?

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What's the Difference?

JEAN WATSON, Kaset International

How many of you are in an organization that has both a Total Quality Guru and a Customer Service Guru? How many of you see these two Gurus working together to coordinate service quality efforts?

Customers make an evaluation of an organization's service by comparing what they expect with what they perceive the organization delivers. We satisfy them to the extent that we meet their expectations. If we exceed their expectations we to please or dazzle them. If we fall below expectations, we disappoint them.

What is the goal state of your organization? Is it customer sensitive, customer focused, or customer driven? Or does your organization emphasize quality as measured internally?

How does your organization measure up in the following areas?

Core service

Customer service

Societal responsibility

Positive, enthusiastic committed employees

De-bureaucratized structure

Core service is why we are in business. It must be delivered at a level that meets expectations in order to satisfy our customers. However, exceeding expectations in core service usually does not build customer loyalty. Customer service, or the treatment around the core, provides the opportunity to exceed expectations, dazzle customers and build loyalty.

Each customer interaction has a human level and a business level. To maximize customer perceptions effectively we need to emphasize the human level. Many organizations tend to focus more on the business level than the human level.

Dr. William Wilsted of Ernst & Young has studied how various issues of quality impact the buying decision. According to Wilsted, there are three "dimensions of quality" that drive purchase decisions:

Effective:	Does the product perform as delivered?
Responsive:	Will the product be delivered on time?
Personal:	How does the customer feel about the purchase?

According to Wilsted, while the provider perceives that the personal relationship with the customer weighs in at only 10 percent of the buying decision, the customer gives it a weight of 70 percent!

Research shows that in core service customers want:
Accuracy
Timeliness
Reliability
Accessibility

While in service quality customers want:
Friendly, caring service
Flexibility
Problem solving
Recovery

The Customer Loyalty Scale indicates to what extent customers will stay with a service provider. Continually exceeding customers expectations will create customer loyalty.

If we "normally distribute" a set of customers around a mean of "satisfied" then potentially half of the customer base will be neutral or less than satisfied with the service they receive.

In order to build customer loyalty and retain customers, we need to aim higher. If we set our goal to make customers happy a greater percentage of customers will be happy or dazzled.

Customers experience service as "moments of truth" –little episodes where they encounter or experience service and have an opportunity to form an opinion. They constantly compare their perceptions of the customer experience to their expectations. Moments of truth link together in a cycle of service, which is a series of transactions around a specific customer need.

Many organizations that focus on quality fail to ask the customer what is important to them. Therefore, the organization can spend their resources on improvements, that make no difference to the customer. The emphasis in these organizations can be systemizing processes.

Many things going on inside organizations can affect the customer during the moment of truth. These factors may be either supportive of a positive outcome, or may negatively impact the customers' experience.

To create outstanding customer service an organization must focus on both the human and business, or both service and quality and create service quality.

Typically, organizations strive to streamline and reduce variability in their internally driven processes, systems, and policies. However, at the moment of truth, customer needs and expectations may require the service provider to adjust to meet the customers needs. This requires the skill to vary the treatment in order to produce consistently positive outcomes with customers.

Quality is summarized by many people as "providing equal treatment to all customers."

Service Quality can be summarized as:
Equal Treatment = Unequal Satisfaction
Therefore – – –
We must vary the treatment for equal levels of satisfaction.
Ken Johnston – Kaset International

Perceptions of HRD Quality in Health Care Institutions

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Does HRD have a role in health care quality? The many debates among health care professionals, politicians, private citizens and consumers of health care services, health care providers, and special interest groups are becoming more focused on issues of universal access to health care, cost containment, shortages of health care professionals, expanded services to rural or other under-served areas, improvement of the health care infrastructure and improved quality. Health care reform will happen but will quality be an integral part of the change?

Human Resource Development by definition gives attention and focus to activities that foster change within the individual and with the resultant outcome, organizational effectiveness. Gilley and Eggland (1989) see the purpose of HRD is to bring about the changes that create performance improvements necessary to enhance the organization. Nadler and Wiggs (1986) talk about on-the-job performance, reducing costs, improving quality, and increasing the competitiveness of the organization. Ferketish and Hayden (1992) see HRD playing a significant role in supporting a culture of continuous improvement by keeping systems aligned with improvement strategies, specifically focusing on total quality improvement.

In the health care setting, HRD should reflect the same outcomes with attention being given to individual development, career development and organizational development. This continuum of development should be reflected with institutional commitment of appropriate resources to accomplish a position of recognized quality. Brimhall (1992) says when it comes to quality in health care, the lack of a common definition for quality is one of the biggest challenges. Because HRD's activities are so varied and cut across all levels of health care delivery, the tendency to define the scope of operation is too often determined by budgetary considerations. Leeth and Welborn (1991) identify the advantages of continuing education as an investment to the organization. To further quality measures in health care settings, HRD must keep a constant eye on the future by staying abreast of technological, financial and managerial changes and the impact of such on the total institution. The contributions of individuals are critical in this process. Therefore, HRD activities must be proactive in nature and help lead the organization into the future of health care reform.

The purpose of this study was to identify among health care professionals their perceptions of HRD quality in health care institutions.

The population used in this study consisted of health care professionals employed in a variety of health care settings, 53% in hospitals, 26% in public health agencies 21% health care educational institutions. Individuals participating in this study were employed in positions of program specialists, human resource managers, clinical specialists, and administrators. Data were collected by a questionnaire distributed to these individuals during an educational program on human resource development. The questionnaire included eleven open-ended items. Analysis included the review and summarizing of responses.

1. Your definition of HRD.
Responses were generally broad in nature to include a range of development types of activities for individuals. The respondents appeared to be unsure of the term to use for the participants, i.e. employees, personnel, people, workforce, staff or human resources. A summary of definitions cited included:

- development and advancement of employees on an individual basis with a focused development on career goals;
- training and or education of personnel to improve both the employee and the organization;
- activities related to maintaining and educating the workforce through individual, career and organizational development;
- development of staff or human resources to meet the needs of the organization, in order for the organization to achieve its stated mission;
- the organization for training, education and staff development;
- personnel resources available to an institution;
- the developing of people to create the greatest efficiency and productivity for the organization;
- pooling of personnel together in order to enhance the strengths and combat weaknesses; and
- continuous education.

2. Types of HRD activities conducted in health care settings.
The responses included very specific types of activities, i.e. CPR courses, safety training, orientation, and skills training. Other examples cited included: inservice, training; technical proficiency training; career planning; continuing education; training for present job; planning for the future needs; field training; extracurricular activities; employee benefits and grievances; wellness and fitness programs; and management training.

3. HRD strengths The strengths of the HRD activity in health care settings were reported to include: improves employee development;provides equal opportunities for improvement of personnel; builds for the future of the institution; promotes efficiency/effectiveness and the develops loyalty; motivates staff; keeps staff current in practice; trains staff better; improves quality of services; maintains a high standard of quality; increases personnel awareness of needs; advances employee professionalism and knowledge; makes a smoother operation within institutions; improves the work environment and quality of the work environment; assists individuals to stay on the cutting edge of the learning curve; and improves team work.

4. HRD weaknesses.
The weaknesses of the HRD activity in health care settings were reported to include: activities do not have a service base to make dollars; there are funding problems; the budget is susceptible to cuts; there is no professional certification for HRD staff; placement in the organization; inability to consistently provide a cost/benefit analysis; expensive; wide variation of professional needs; lack of top administration support; individual needs are lost to the organizational needs; and HRD activities are done only to meet requirements.

5. HRD's contribution to quality of services.
The respondents appeared to be quite focused with their responses citing repeatedly:

- continuous improvement in health care is dependent on a progressive HRD department;
- a higher quality of services is realized through inservice training and job enhancement;
- enhancing personnel growth, increases the productivity of personnel;
- morale is increased; and
- staff is happy with jobs, therefore better patient care is provided.

6. What role should HRD take in continuous quality improvement (CQI)?
A summary of responses included: watching of standards and procedures; HRD should develop it's employees to be better educated and informed employees therefore facilitating CQI; HRD should teach and support the concept; HRD should take a lead role in putting together a multi-disciplinary approach to quality; and HRD takes a major role in CQI because employees must be taught in areas that need improvement.

7. Do you see a difference between HRD and the human resource management/personnel (HRM) function?
This item appeared to confuse the respondents as the typical response was no difference was seen. A limited numbers of responses cited HRD as managing the process of training and development, while HRM is concerned with the everyday personnel functions of hiring and processing employee paper work.

8. The most significant contribution HRD makes in health care institutions. Responses included:

- makes people better suited for what they do within and outside the organization;
- makes a person more valuable;
- provides visible proof of an institution's value placed on its human resources;
- assures workforce is adequately trained and therefore contributing to the quality factor of the institution;
- inservices on new equipment make significant contributions to the organization;
- its the organization's way of communicating to employees that it cares and is willing to contribute to their development;
- instrumental in "setting the pace" for continuous quality improvement within health care institutions;
- helps to further educate employees;- - makes employees perform at their greatest potential;
- allows opportunities for career advancement by enhancing an individual's potential;
- builds upon its foundation the workforce;
- allows creativity or alternative ways of getting things done;
- attracts the best staff members who in turn provide the best patient care;
- provides a sense of caring for the development of individual employees;
- prevents mistakes; and
- provides the means for training and development needed for all personnel.

9. What type of qualifications should HRD staff possess?
The responses included types of degrees and types of abilities. Degrees identified were bachelor's and master's preparation. Suggested bachelor degrees included adult education, psychology, education, administration and health related areas. Master's preparation included education and human resources degrees. Types of abilities named included: communication skills; understanding of the health care system; desire to educate others; good interpersonal skills; program design and training skills; teaching/instructing skills;

subject specialists; high ethical and organizational standards; flexibility; versatility; be people oriented; and good presentation skills.

10. How should HRD be funded?
Responses were specific including through general operational funds, fees charges to participants, grants, patient revenues, and anyway you can cover the necessary costs.

11. What do you see as the future for HRD in health care institutions?
More inservice and continuing education activities, training people to work as team members, cross-training types of activities, more use of technology with training activities, more managerial training, addressing "total patient care" and preventive health care measures, retraining, and HRD will be responsible for the quality education of the total quality management process.

Discussion.

The attention given HRD activities in health care settings appears to be focused primarily in the areas of individual development activities, i.e. skills training and inservice education. The health care settings by nature of the business are crisis/acute care oriented; therefore, the type of HRD activities defined and conducted seem to reflect this same style. Although the strengths, contributions and future activities identified in this study reflect a number of advantages health care institutions might realize from HRD activities; the qualifications of staff and the funding mechanisms are vague. It is interesting to note the confusion that continues to exist between HRD activities and the functions of personnel or HRM. The weaknesses identified are offset by the role HRD can assume with the quality of service issue. The respondents recognized continuous improvement is dependent on progressive HRD activities.

Conclusions Implications of these findings identify specific actions health care institutions could take in the future as the issues of health care reform takes place and the role HRD will assume in that reform. The application of HRD in non-health care settings gives attention to a more comprehensive HRD approach inclusive of individual, career and organizational development. Health care settings should refocus their efforts to expand HRD activities to include the total spectrum of activities.

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New Dimensions in Distance Learning

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Introduction

It has been estimated that adult part-time students involved in specialized training and re-training will account for 60% of all college enrollments by the end of the decade. Traditionally bound by walls and accustomed to providing instruction to four-year, full-time students, universities are having to create new infrastructures for education that will reach the new majority. To address the changing needs of the community and the workplace, institutions of higher education are making a shift towards on-line teaching-i.e., distance education. In many applications, distance education is treated as an alternative delivery system...a way to extend what the institution does. Primary focus is often placed on (1) getting the technology in place, and (2) tending to administrative and student support issues. The least amount of attention is given to 'educating' at a distance. In many instances, the tendency has been to use traditional teaching strategies, established curricula, and to then attempt to use existing standards of measurement to determine the effectiveness of the distance education process.

Faced with a technology that opens the possibility of radically changing the business of education, institutions of higher education are responding by consistently casting technology in a framework that favors the maintenance of the status quo. The result -- what Botkin, Elmandyria and Malitza (1979) refer to as the human gap -- a growing distance between the complexity brought about by trying to fit a 'square peg in a round whole,' and our capacity to deal with it.

It is the design of our current instructional system that is at the heart of the problem. As the one-room schoolhouse, a first-wave educational system, was appropriate for what Toffler (1980) called a first-wave agrarian society, and the second-wave educational system had a structure and philosophy for the second-wave industrial society, so the third-wave educational system needs to develop a structure and philosophy for our present information and communication based society. Assembly line thinking and practice of the industrial machine age has characterized the educational factory - highly regimented, rigidly controlled, lockstepped, group-based, top-down designed, isolated in time and space. Rather than continue to allow current education and learning processes to be hammered into a 'shape' that fits the newest technological delivery system, it is time to re-shape the way we approach education and learning to fit within the constantly growing, rapidly changing social environment brought about by the age of information and communication.

Our nature as learners contains an interesting contradiction: important growth requires change. We have to give up our comfortable ways of thinking and survive the buffets of taking on unfamiliar ideas, skills, and values. Curiously, the answer is to produce disequilibrium - to create environments that impel us to change. This does not mean we are to discard what we were at any given stage, but rather that we learn to productively build on each step that came before. Thelen's (1960) advise to us is still correct. The learner needs to confront problems and diverse opinions in order to reach beyond the current level and generate the mechanisms that will sustain growth at another level. This is especially relevant in our current 'information society' where learners are bombarded with so much data that it is often difficult to know what to keep and what to throw away.

Consider how students learn from instructional material. What determines which capabilities a student has acquired after exposure to information? The content of the information is undoubtedly important. So is, to a lesser degree, its organization. But the most important, to an overwhelming degree, is what the learner does with the information. In a sense the learner has complete veto power over learning, since without some activity on his or her part the instructional objectives can never be achiever. The student must enter the instructional situation.

In order for students to select and choose information in a meaningful manner, they must remain open and flexible. The educators' role is to create environments that present a diversity of information and opportunities that encourage problem solving and enhance the students' ability to make appropriate and relevant choices.

The Need for Integrating Technology into Teaching Methods

Lauzon and Moore (1989) describe a number of factors that have been identified as instrumental in implementing successful educational activities using technology. These factors pertain to insuring that participants initially receive the necessary skills and support structures to help solve technical problems. Beyond these factors, we need to actively involve the learners in the process of learning rather than having the learners only adapt to the requirements of the technology. Technology, like the sorcerer's apprentice, has the tendency to take over the activities and become its own justification. The power of enchantment is not necessarily the same thing as selecting appropriate information and making intelligent choices from that selection. Consider the sorcerer's apprentice who learned enough magic to put his broom to work hauling water from the river to his master's cistern, but not enough to control it. The student, like the apprentice, can easily fall into the enchantment of being controlled by the technology rather than controlling it.

To complicate the issue even more, researchers and practitioners often fail to distinguish among various types of learning in these environments. There is a need for many types of learning processes, since they promote different objectives. Discovery learning procedures, for example, are useful for some things and not others. Similarly, rote learning is absolutely essential for certain tasks. For example, rote learning is crucial to medical students who must memorize the names and labels of various parts of the body, and discrimination learning is an essential part of learning the letters of the alphabet. It is important to remember, then, that there are many types o f learning, each drawing on different mental processes, each serving different educational objectives, and each having a preferred method of instruction. They are all necessary to the process of education. Problems arise not as much because a particular instructional method is bad, but because it is used either inappropriately or consistently for all situations.

An Approach To Integration

According to Ausubel (1968), whether material is meaningful depends on the learner and the material, not the method of presentation. If the material is potentially meaningful for the learners, then meaningful learning occurs. A meaningful learning set implies that the learner must be ready to comprehend and relate what is being presented, rather than to memorize it verbatim. Ausubel and others assert that for meaningful learning to occur, the learner plays an active role, whether covert or overt.

Learners come to the educational activity with varying degrees of knowledge and experience, and with different interests that focus their attention. For the learner to become active in the process, an environment needs to be created that allows for these differences and builds on this foundation.

Where technology is involved, the traditional educational mindset has been content focused , that is, to have all the information and 'the answer' available to the teacher and the learner. In this process the learner is passive and controlled by the sheer amount of information which may or may not be relevant to their particular frame of reference . This is particularly apparent in our current 'information society' where learners are bombarded with so much data that it is often difficult to know what to keep and what to throw away. This does not encourage problem solving and thinking skills. One approach for integrating the individual readiness each learner brings to the activity is to emphasize problem solving with reasoning skills, and identifying each learners needs in an interactive process. This can be done by selecting problems that are most frequently seen in practice, and problems that learners are most apt to encounter. By way of the problem, the students are constantly stimulated to seek out the information for solving the problem within their own frame of reference. In this process, the learners are encouraged to develop self monitoring skills necessary to identify their own learning needs. As these learning needs require more information, the role of the facilitator is to guide, not direct, access and use of information. In this way, problem based learning can be used as the springboard to move from well defined to anomalous problems or situations that are encountered.

As the students identify 'gaps' in information and attempt to solve the problem two things are happening- first, it becomes necessary to identify and use the technological resources needed to access information, and second, they are forced to develop skills for selecting and choosing relevant and appropriate information. Gradually the learner is guided to become more self-directed. In this environment, the student will bring contributions to the group that are based on their own interests and experiences. The information retrieved comes from their personal 'need to know' rather than information deemed important by the 'teacher' but which may be superfluous to their individual need. Rather than usurping the power of the 'content expert', this form of information retrieval, then, actually adds to the 'content' of the class as a whole.

Basically we've integrated one innovative educational method (problem -based learning) with technology. This strategy has three phases, each building upon the previous. Phase One is concerned with problem identification and definition and has two themes developing a parallel:

a) the development of basic technical skills necessary to access information
b) development of cognitive skills necessary for the reasoning process.

Phase Two involves the development of self-monitoring skills necessary to identify learning needs, and promotes self- directed learning. This is accomplished by interspersing information -seeking and instructor and/or peer feedback in order to keep on track. Phase Three is a cumulative, building process of relative information. Students practice exchanging information on the usefulness of various sources. Here they practice sharing new learning by presenting it to their peers and by questioning each other. Once the solution or decision is reached, a new m more difficult problem is presented, and the process continues.

In Phase One, both the instructor and learner have the technological competency. In this phase, the instructor needs not only a degree of content, knowledge of subject matter, and the knowledge of a variety of teaching methods, but also a degree of technological competence (computer competence), and the skills for accessing electronic communication data banks . The student also needs a degree of technological computer competence to become skilled at accessing electronic communication . and the desire to learn. This phase is more teacher directed-learner centered.

In Phase Two, the role of the facilitator changes from directing to helping or guiding the students learning. The student is guided to formulate and seek out concepts and solutions that build on their previous knowledge and experience.In this way, Phase 2 moves more towards self -directness on the part of the student. Therefore, the evolution of phase 2 is from teacher-directed to learner -directed.

As the transition from Phase Two to Phase Three evolves, students are constantly stimulated to identify where they need more information. Here they share the information and get accumulate feedback and information from the other students. This feedback helps the person identify the individual gaps in his or her learning, and the process continues with students becoming increasingly in control. They have identified the 'gaps' in their learning that needs further investigation, they have developed the technical and reasoning skills to fill in those gaps, and they are able to proceed with minimal guidance.

Summary

This is only one approach using an innovative way of getting students to move toward monitoring their own learning, and learning how to access and retrieve information that is relevant to problems or situations they are working through. This model is intended to show you what may be possible when varying levels of technology are integrated into the learning space. As with the students how brought to the learning environment a base level of knowledge and experience, facilitators will bring varying levels of knowledge and experience. The difference today is that the facilitator may start out with a higher level of subject matter expertise, but not a high level of technological competence. For many, this may be an awkward situation. So what happens is that both student and facilitator find themselves in the 'learning process together....each at different levels and with different objectives. The role of the facilitator that emerges in this model,then is a change from content expert to that of ' guide' and 'learner'.

Meeting Customer Needs for Distance Learning Information

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Meeting Customer Needs for Distance Learning Information

Distance learning is a field which has received increased attention from such entities as institutions of higher education and corporations in the past few years due, in part, to the globalization of both the private and public sectors. The combination of the need to communicate over distances, reduce time and travel costs in a competitive environment, and implement advances in technology, have led to a new emphasis on distance learning models. In fact, distance learning has recently been identified as one of seven major trends in training and development for the twenty-first century (Spikes, 1990).

With this new focus comes many questions and requests for additional information and definitions, regarding distance learning. Distance learning researchers are urged to define the field (Garrison, 1989; Verduin, 1991), and educational institutions which specialize in distance learning have been flooded with requests for presentations on the subject. This has proved true at Texas A&M University in College Station, Texas, also. Therefore a project team was formed to research the need for informational materials and develop a response.

Background and Problem Identification

Texas A&M University has a satellite uplink and downlink, a fiber optic videoconference system, and computer networking capabilities. In terms of distance learning, these can be used to teach classes and conduct meetings or conferences for students, businesses, and state agencies across Texas and the United States. Unfortunately, the vast majority of the Texas A&M University populace, as well as contacts in industry and public agencies is not aware of these distribution methods for education. For years, Texas A&M University had no informational material on these methods to distribute to students, faculty, and visitors, other than a few brochures and handouts on the Texas A&M University System's videoconferencing network.

A need existed to produce educational material in a highly visual format -- namely, videotape -- to inform customers (students, faculty, industry contacts, and University administrators) of what Texas A&M University's distance learning abilities were, how the different distance learning technologies operated, and how the university was using them. Although some videos produced by other universities and corporations did exist on particular components of distance learning, no program focused on Texas A&M University's use of distance learning technologies.

Because of the perceived lack of easy-to-understand, useable and visual information on basic aspects of distance learning at Texas A&M University, providing that information to individuals and groups not familiar with distance learning became the main concern of a group of Texas A&M doctoral students taking a graduate-level studio television production course during the Fall 1992 semester. The course traditionally had been set up strictly as a studio television production course. However, because of the need for visual information

on distance learning and because the class had individuals with extensive backgrounds in television production, computer animation and distance learning, producing edited videotapes, in lieu of a studio production, became the focus of the class.

The videotape format was chosen for the following reasons: the course was a television production course; impressions of images combined with audio are more powerful and longer lasting than the written word alone; and the format is easily transportable and easy to mail. As a result, a series of three customized videotapes were developed to meet customer needs for distance learning information.

Process

The class, comprised of five students and taught by Dr. Rodney Zent, head of Texas A&M University's Educational Broadcast Service, developed a planning and implementation process which comprised the following steps: 1) needs analysis, 2) research, 3) script development, 4) production, 5) distribution, and 6) evaluation.

Needs analysis consisted of identifying the customers and the major types of information they were requesting. This was accomplished through conducting informal interviews with identified "distance learning experts" on campus. It was estimated that Texas A&M University received approximately fifteen (15) to twenty (20) requests per month for information relating to distance learning. These included requests to: 1) provide presentations on distance learning; 2) arrange tours of distance learning facilities; 3) provide assistance in operating distance learning equipment; and 4) provide definitions and examples of distance learning in a learning format, (i.e. brochures, videotapes, handbooks, etc) in order that the information could be used in other learning environments.

The customer was identified as belonging to one of the following categories: professors and students at Texas A&M University as well as at other universities; visitors from private corporations; and teachers or administrators from the public sector. Two common needs were for a definition of distance learning and information on background or the history of the field. A third major need centered around information on the types of technologies used to conduct distance learning and how to use them. Other needs dealt with common applications and instructional design issues when teaching and communicating via technology over long distances.

Based on the needs analysis information, the project team decided to produce three videotapes, each dealing with a different aspect of distance learning. The first featured an overview of distance learning, including a definition, history, common applications, and instructional design issues. The second focused on the role of satellite technology in distance learning and how the equipment works, while the third concentrated on the Texas A&M University's videoconferencing network and equipment operation.

In terms of the definition for distance learning, the team decided to use the three criteria outlined by D.R. Garrison in his book, Understanding Distance Education: A Framework for the Future (1989), since it was a recent definition which encompassed much of what was happening at Texas A&M. Garrison's three criteria for distance learning are: 1) educational communication between instructor and participant is separated by a geographical distance; 2) the communication is two-way and interactive; and 3) a form of technology is used to facilitate the learning process.

The research phase involved brainstorming for story content in the videotape, a review of distance learning material from other universities, and library research. For content brainstorming, a series of breakfast meetings were initiated to discuss the specific material for each program. From a long list of topics, the most important subjects were selected. So what began as a lot of "fat" in each program, was trimmed to a "lean" selection of crucial topics to meet customer needs in a video format.

The team examined videotapes from other universities and found them lacking for the class's purposes. Most were lengthy, filled with difficult-to-understand information and were too "location-specific" for Texas A&M University's use. At several Southern

universities, little or no "user-friendly" information in a video format is available on distance learning (Conversations with 15 Communication Specialists, 1992). Library research included gathering distance learning information on definitions, application, and technologies in preparation for script-writing.

Script-writing was a lengthy process, as the scripts went through several revisions before they could be used in a video production setting. The class opted for a flexible format of three six-minute videotapes to meet the various customer needs. In this way, customers could choose to use the videos in a streamlined presentation -- one that could be used as an 18-minute block of time, by showing all three videos back to back. Or they could use the videos in an instructional mode, by showing one six-minute segment, then stop for questions and discussion before moving on to the next six-minute segment. The scripts were written to reflect this format. Another advantage to this segmented style, was the possibility for additions in the future, with such subjects as computer networking and instructor/participant adaptation, as possibilities.

After the scripts were approved, the production phase began. Video was shot in the studio and on location. In addition, any previous footage of classes being taught by satellite and videoconference was located and reviewed for applicability. After the video was gathered, audio work was completed. Background and theme music selections were chosen, and the scripts were voiced by two people with professional experience. Finally, the videotape editing process took place.

The previous paragraphs may make it appear that once the idea was chosen, the production process took very little time. Nothing could be farther from the truth. A "rule of thumb" for video production is at **least** one hour of editing time is needed to complete one minute of finished video. This amount of time does not take into account the time involved shooting video, developing computer animation or scripting. Table 1 provides a breakdown of the time involved in this project, from conceptualization in early September to the finished product in mid-December. The minimum cost of a project of this length and quality would be at least $1,000 per minute of finished video. This translates to a price tag of about $18,000 to $20,000 for the three videos.

TABLE 1

Time Involved in Production of Three Distance Learning Videotapes

Production step	Time involved (hours)
Conceptualizing idea	6
Researching script	3
Writing script	12
Revising script	8
Developing computer graphics	45
Videotaping	15
Selecting music and editing audio	4
Narrating script	1
Editing videotape	24
Total	**118**

Distribution of the videotapes was not planned to be a formal effort, but more of an informal one in which the videotapes would be made available at the Center for Distance Learning and KAMU-TV where most of the visitors came and requests for information were focused. To date, videotapes have been mailed to the following parties: 1) key Texas state legislators in Austin interested in developing a model for distance learning in terms of cost advantages for education; 2) state agencies, such as the Department of Commerce, Texas Education Agency, and the Texas Employment Commission; 3) the Agriculture and Engineering Extension groups for information on using more distance learning technologies in their educational endeavors; 4) three different Texas A&N University departments; and 5) a coalition of universities in Indonesia who already have an extensive distance learning network and are interested in U.S. models.

Evaluation of this project is still ongoing, but feedback so far has been excellent. The number of videotapes requested with no advertising--over twenty (20)--in the two months since its introduction, is another indicator of success. The team intends to conduct follow-up evaluation and to consider adding additional segments in the future. Preliminary informal feedback suggests that adding a segment on computer networking use in distance learning is needed, since this is an area that is rapidly growing, especially internationally.

Significance of Project

The result of this project provided needed educational information on distance learning definition, history, applications, instructional design issues, and technology to customers in the university, business, and public sectors. Through development and distribution of the videotapes, several future benefits will result: cost savings in faculty time, in terms of orientation to the technologies; distribution of more concise information on distance learning; wider coverage and use of information in different learning settings; and most importantly, the ability of Texas A&M University to recognize and meet the public need for information on distance learning for future applications.

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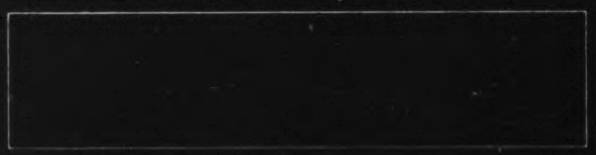

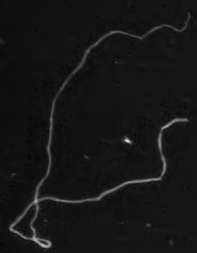

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